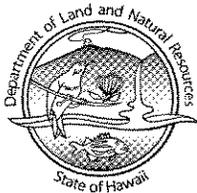


LINDA LINGLE
GOVERNOR OF HAWAII



AUG - 8

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CHAIRPERSON
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COMMISSION ON WATER RESOURCE MANAGEMENT

DAN DAVIDSON
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

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AQUATIC RESOURCES
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CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

REF:OCCL:DH

CDUA: OA-3506

MEMORANDUM

TO: Katherine Puana Kealoha, Director
Office of Environmental Quality Control

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: Final Environmental Assessment (FEA) for Conservation District Use Application (CDUA) OA-3506 to Expand Existing Moi (*Polydactylus Sexfilis*) Aquaculture Farm an Additional 33.51 Acres to 61.59 acres and Expand Lease for State Marine Waters, Two Miles Offshore Ewa Beach, Island of Oahu

The Department has reviewed the Final Environmental Assessment (FEA) for Conservation District Use Application (CDUA) OA-3506 to expand the existing Moi (*Polydactylus Sexfilis*) Aquaculture Farm an additional 33.51 Acres to 61.59 acres and expand the Lease for State Marine Waters, Two Miles Offshore Ewa Beach, Island of Oahu. The Draft Environmental Assessment (DEA) for the project was published in the May 23, 2009 issue of the Environmental Notice. The FEA is being submitted to OEQC. We have determined that this project will not have significant environmental effects, and have therefore issued a FONSI. Please publish this notice in OEQC's upcoming August 8, 2009 Environmental Notice.

We have enclosed four copies of the FEA and CDUA OA-3506 for the project. The OEQC Bulletin Publication Form is attached. Comments on the draft EA were sought from relevant agencies and the public, and were included in the FEA.

Please contact Dawn Hegger of our Office of Conservation and Coastal Lands staff at 587-0380 if you have any questions on this matter.

Enclosures

JUL 29 2009

A large, stylized handwritten signature in black ink, appearing to read "Samuel J. Lemmo".

Final Environmental Assessment

Proposed Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawaii

Prepared for: Office of Conservation and Coastal Lands
Department of Land and Natural Resources

Prepared by: Aquaculture Planning & Advocacy LLC
Honolulu, Hawaii

July 24, 2009

Notes on Format Used to Depict Revisions

The following notation has been used to depict substantive differences between this document and the *Draft Environmental Assessment (DEA)*:

- Insertions are noted by a **double underline**.
- Deletions are noted with a ~~strike through~~.

In order to maintain legibility, formatting changes (such as revised headers and footers), updates to the Table of Contents with new page numbers and cross-references, changes to the publication date, revisions to the title page to reflect the fact that the document is a “Final” EA, rather than a “Draft” EA, the new Appendix 3, and other non-substantive changes are **not** marked.

Project Summary

Project Name: Proposed Expansion Hukilau Foods Offshore Fish Farm

Proposed Action: Expand the current 28 acre State ocean lease to 61 acres and increase the size and number of submersible sea cages from four (4) 3000 m³ to eight(8) 6000 m³. A feed/security barge is to be permanently moored on site. Limited site use by the public is requested by restricting snorkeling or SCUBA diving or anchoring of any boat in the leased area.

Applicant: Grove Farm Fish and Poi LLC
dba Hukilau Foods LLC
P. O. Box 335
Kailua, Hawaii 96734

Contact: Randy Cates
Phone: 808-841-4956
Email: rcates@hukilaufoods.com

Approving Agency: Department of Land and Natural Resources
Office of Conservation and Coastal Lands
Honolulu, Hawaii 96809

EA Preparer: Aquaculture Planning & Advocacy LLC
c/o Hukilau Foods
P.O. Box 335
Kailua, Hawaii 96734

Contact: John Corbin
Phone: 808-239-8316
Email: jscorbin@aol.com

Project Location: Expansion seaward of existing offshore lease site approximately 2 miles offshore of Ewa Beach, Oahu, in water depths between 140ft and 250 ft

Tax Map Key: Seaward of nearest TMK: (1) 9-1-27

State Land District: Conservation District and Resource Subzone

Land Owner: State of Hawaii

Permits Required: CDUP, DLNR; Dept. of Army Section 10 Permit; NPDES/ZOM Permit

Anticipated Determination: Finding of No Significant Impact (FONSI)

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Conversion Table

This DEA utilizes both English and Metric Units. Utilize the values below to convert English Units to Metric Units and Metric Units to English Units. N= value to be converted.

- feet to meters= $N \times .3048$
- meters to feet= $N \times 3.281$

- inches to centimeters = $N \times 2.54$
- centimeters to inches = $N \times .3937$

- miles to kilometers = $N \times 1.609$
- kilometers to miles = $N \times .6214$

- meters³ to feet³ = $N \times 35.312$
- feet³ to meters³ = $N \times .0283$

- acres to meters² = $N \times 4046.86$
- meters² x acres = $N \times .000247$

- pounds to kilograms = $N \times .4536$
- kilograms to pounds = $N \times 2.205$

- knots to feet/sec = $N \times 1.67$
- knots to cm/sec = $N \times 50.9$

List of Acronyms and Abbreviations

ACOE	Army Corps of Engineers
ADP	Aquaculture Development Program
BLNR	Board of Land and Natural Resources
CDUP	Conservation District Use Permit
CWB	Clean Water Branch
DA	Department of the Army
DAR	Division of Aquatic Resources
DBOR	Division of Boating and Ocean Recreation
DLNR	Department of Land and Natural Resources
DOA	State Department of Agriculture
DOH	State Department of Health
DEA	Draft Environmental Assessment
DOT	State Department of Transportation
EA	Environmental Assessment
FAD	Fish Aggregating Device
FCR	Feed Conversion Ratio
FONSI	Finding of No Significant Impact
HAR	Hawaii Administrative Rules
HF	Hukilau Foods
HIHWNMS	Hawaiian Islands Humpback Whale National Marine Sanctuary
HOARP	Hawaii Offshore Aquaculture Research Project
HRS	Hawaii Revised Statutes
KBWF	Kona Blue Water Farms LLC
LLC	Limited Liability Company
NASA	National Aeronautics and Space Administration
NPDES	National Pollution Discharge Elimination System
NMFS	National Marine Fisheries Service
NOAA	National Oceanic and Atmospheric Administration
OCCL	Office of Conservation and Coastal Affairs
OHA	Office of Hawaiian Affairs
SS	Sea Station
SCUBA	Self Contained Underwater Breathing Apparatus
UH	University of Hawaii
UHSG	UH Sea Grant
ZOM	Zone of Mixing

1.0 INTRODUCTION

Hukilau Foods LLC (HF), formerly Cates International, Inc. (CII), is proposing to increase the size of its existing offshore lease approximately two miles off Ewa Beach, Oahu, for expanded aquaculture of the native species, moi (*Polydactylus sexfilis*). The purpose of this Draft Environmental Assessment (DEA) is to update the previous environmental review, pursuant to Chapter 343, Hawaii Revised Statutes (HRS), as amended, and Title 11, Chapter 200, Hawaii Administrative Rules (HAR), as amended. The updated review will be used in the process to amend the existing permits and the lease or secure new permits, as required.

1.1 PROPOSED PROJECT IN BRIEF

HF has a long-term lease for 28.077 acres of State marine waters, authorized on January 21, 2001 by the Department of Land and Natural Resources (DLNR). The Company is approved to operate four anchored Sea Station (SS) 3000 sea cages, each with a volume of 3000 m³, and with a total production capacity of around 1.2 million pounds a year, with multiple crops. The farm has successfully operated for seven years with minimal environmental impact, using cages that are operated submerged 30 ft. to 40 ft. below the surface, in an average water depth of 140 ft. Stocking, harvesting and daily feeding and maintenance occurs from surface work boats and barges, with SCUBA diver assistance.

HF proposes to amend its existing lease to expand to a total of 61.59 acres and accommodate four additional larger structures, SS 6000 series cages, each with a volume of 6000m³. The Company also proposes to change out the existing four cages for SS 6000 cages and reposition the initial mooring grid to accommodate the new configuration. The proposed changes will provide the potential to produce up to 5 million pounds of fish a year, with multiple crops. In addition, HF is requesting that a feeding/security barge be permanently moored (24/7) at the site, with lighting approved by the Coast Guard. With the expanded site and in consideration of staff and public safety, expanded operations and insurance liability, the Company is requesting that no snorkeling or SCUBA diving or anchoring of any boat be allowed in the entire lease area. Boats may continue to freely transit the area.

1.2 POTENTIAL BENEFITS

On a broad national level, this project will continue to demonstrate that commercial open ocean fish farming can be carried out in an environmentally sound, economically viable manner. Hawaii currently leads the nation in the development of commercial open ocean aquaculture with two operating companies (HF and KBWF) - the Secretary of Commerce has declared the state the Silicon Valley of aquaculture (Stanton, 2006). Going forward, US interests are expected to foster continued expansion of this industry sector in coastal waters around the country to increase domestically produced seafood supplies from their current contribution of only 20% of total US consumption (Corbin, 2007; NOAA, 2008).

HF strongly desires to benefit the Hawaii economy and residents statewide by focusing on two long-term goals: 1) Sustainably producing quality seafood that significantly contributes to satisfying the local demand for moi, before considering exportation, and 2) Hiring qualified Hawaii residents for the expansion of its work force. Among the foreseeable community benefits of the proposed project are: 1) generation of high wage, skilled jobs; 2) local purchasing of equipment and supplies; 3) local purchasing of services for administration, environmental monitoring, and repair of facilities; 4) increasing the supply of high quality seafood to resident and tourist markets; and 5) payment of lease rents to the State.

1.3 PERMITS AND APPROVALS

There are three major permits that govern siting and operating an offshore fish farm in State marine waters: the Federal Army Corps of Engineers (ACOE), Department of the Army (DA), Section 10 permit; a State Department of Land and Natural Resources (DLNR), Conservation District Use Permit (CDUP); and the State Department of Health (DOH), National Pollution Discharge Elimination System (NPDES)/Zone of Mixing (ZOM) permit. In addition, an Aquaculture License from the Division of Aquatic Resources (DAR), DLNR is also needed.

1.3.1. Federal

An ACOE Section 10 permit is required for structures or work in US navigable waters. Structures or work includes deploying anchors, mooring systems, and sea cages. The permit is issued by the Regulatory Branch, Honolulu District, USCOE. The public interest review of the application requires consultations with appropriate local agencies for potential impacts on: historic resources, protected species and critical habitat, as well as, consistency with State Coastal Zone Management Program objectives and policies.

1.3.2 State

A CDUP for commercial use of State marine waters and submerged lands is required from the Office of Conservation and Coastal Lands (OCCL), DLNR. All State marine waters are in the Conservation District, Resource Subzone and aquaculture is a permitted use in the Resource Subzone. After public review, the CDUP application, which requires attachment of an EA, is approved at a regularly scheduled meeting of the Board of Land and Natural Resources (BLNR).

The NPDES/ZOM permit issued by the Clean Water Branch (CWB), DOH, regulates fixed point source discharges into surface waters, including coastal waters. Offshore cage complexes (one or more cages on a site) are considered a point source discharge and need a NPDES/ZOM permit to operate when production exceeds 100,000 lbs. annually. Production less than 100,000 lbs. can be exempted from the permit requirement.

An aquaculture farm growing a species regulated by State fisheries management laws requires an Aquaculture License. Licenses are issued by the DAR, with technical assistance by the Aquaculture Development Program (ADP), Department of Agriculture (DOA).

2.0 COMPANY HISTORY

Chapter 190 D, HRS, the ocean and submerged lands leasing law, was amended in July 1, 1999 by the State Legislature to permit leasing of State marine waters for commercial aquaculture. CII was the first company to apply for an ocean lease under the amended law. Company planning benefited from participation in the federally funded, comprehensive multi-year cage culture research project, the Hawaii Offshore Aquaculture Research Project (HOARP), which began in April, 1999 and demonstrated sea cage culture at a site several miles off Ewa Beach, Oahu (Ostrowski, et al, 2001). Based on its firsthand experience as part of the HOARP team, CII sought a lease adjacent and seaward of the research project site.

CII received an approved CDUP and authorization for a lease from DLNR, January 26, 2001.

Subsequently, on August 23, 2002, a General Lease to CII was approved by BLNR, encumbering 28.077 acres for operation of four cages. The term was 20 years, with a reopening and redetermination of the rent on the 10 year anniversary of the approval. Two SS 3000 cages were operated until April 14, 2003, when administrative approval was gained to deploy the third and fourth cages. Fingerlings, the baby moi needed to stock the cages, were supplied during this time period, through an arrangement with the Oceanic Institute for hatchery services.

Successful operation of the total four cage system approximately two miles offshore for nearly six years, demonstrated the commercial potential of submerged cage technology and marketability of moi in Hawaii and on the mainland. The feasibility of the technology was further underscored by the startup of Kona Blue Water Farms (KBWF) in March 2004 off Kailua-Kona, Hawaii using the same off-the-shelf cage technology. In 2006, Grove Farm, a kama`aina, Kauai-based agribusiness firm, expressed interest in investing in CII to significantly expand production. As a result, Grove Farm formed the subsidiary Grove Farm Fish and Poi LLC, which acquired CII, and rebranded the operation as Hukilau Foods LLC. Ownership of CII was officially transferred to Grove Farm Fish and Poi LLC on April 1, 2006.

In looking towards the future, the new company has acquired a lease from the DOA for four acres in the Kalaeloa Agricultural Park, near Campbell Industrial Park. The site is being used to build a large-scale hatchery to secure a large and consistent supply of fingerlings to stock the offshore cages. With the facility under construction and staffed with experienced personnel, HF is now seeking to expand its existing lease and production to realize the economic benefits of an integrated hatchery/ cage grow out operation and the inherent economies of scale. HF will continue to operate other support facilities leased from the DBOR, DLNR at Keehi Lagoon. In addition to office space and general storage, these facilities provide feed storage, a maintenance shop and fish transfer and packing capabilities.

3.0 DESCRIPTION OF THE PROPOSED ACTION

3.1 TECHNICAL AND OPERATIONAL CHARACTERISTICS

3.1.1 Location and Technical Characteristics

HF is proposing to increase its existing open ocean State lease off Ewa Beach, Oahu for expanded sea cage culture of the native fish species, moi, *Polydactylus sexfilis* (Fig. 1 & 2). Current operations consist of four SS 3000 cages, each with a volume of 3000 m³, and with a maximum total production capacity of 1.2 million lbs per year. The farm has successfully operated for seven years with minimal environmental impacts using a mooring system that anchors cages submerged 30 to 40 ft. below the surface, in an average water depth of 140 ft. (Fig. 3). Regular stocking and harvesting, daily feeding of stock, and system maintenance occurs in the submerged mode from specially designed surface boats and barges, with SCUBA diver assistance.

The Company desires to build on its three years of HOARP research experience and seven years of commercial experience and expand production capacity to up to five million lbs. a year. To accomplish the increase, it is proposed the existing site be expanded in the seaward direction to 61.59 acres. The expansion will accommodate four additional state-of-the-art SS 6000 series sea cages, each with a volume of 6000 m³ and available commercially from Ocean Spar LLC, Bainbridge, Washington (Fig. 4 a & b). HF also desires to change out the four smaller cages obtained from the same company and replace them with SS 6000 cages to further

increase production and promote operational efficiency. The new cage layout will require realigning and adding to the current mooring grid to accommodate the additional cages (Fig 5 a & b). However, the total number of anchors to secure the grid will not increase and will remain at 16. The cage array will be oriented roughly perpendicular to the nearest land and to the prevailing currents to allow for maximum mixing.



Fig. 1 Regional map showing Hukilau Foods project site.

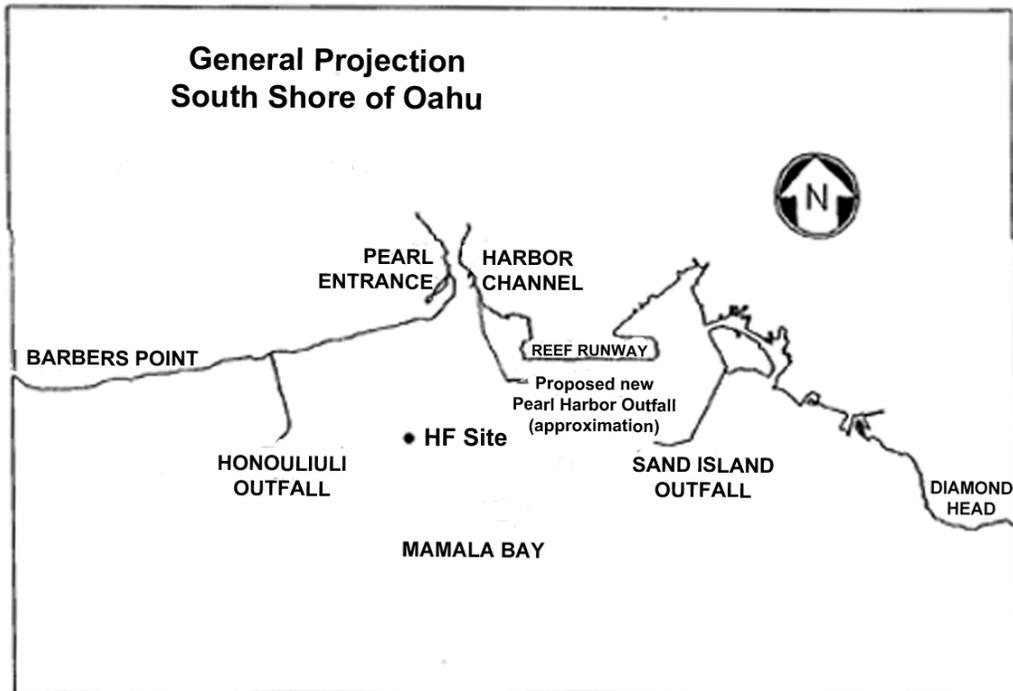


Fig. 2. South shore of Oahu with location of the project site and points of interest.

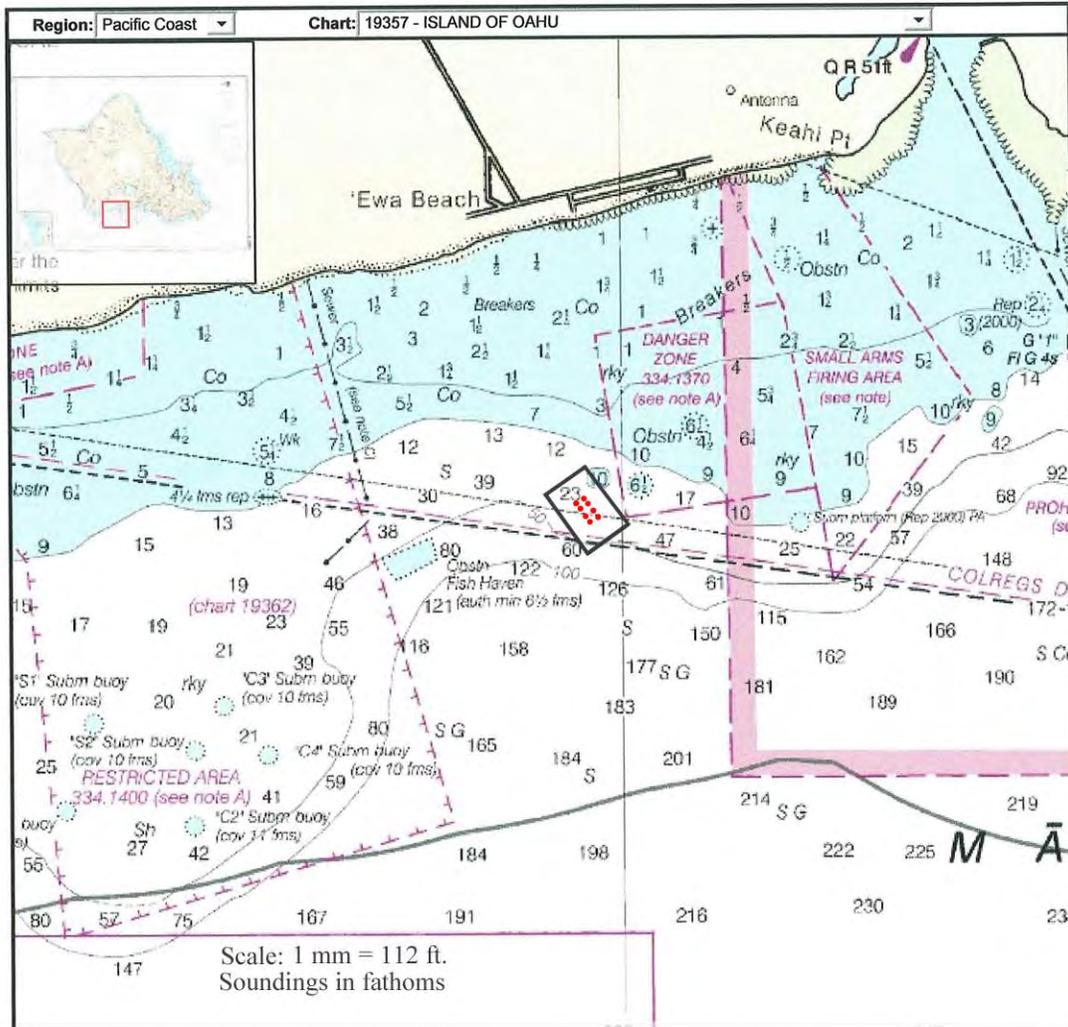


Fig. 3. Site location in the vicinity of Ewa Beach, with water depth and bottom type. Bottom types: Co (coral); rky (rocky); SG (sand and gravel); S (sand). Red circles are cages.

Specifically, HF proposes to widen the current North-South dimension of the current rectangular site layout from 782 ft. to 1451 ft. and the approximately East-West dimension from 1564 ft. to 1849 ft. (Fig. 5 a & b). This will result in extending the current Northeast boundary seaward 285 ft. and extending the Northwest boundary to the Southeast a total of 669 ft. In total, the site will be expanded 33.5 acres to accommodate the new mooring configuration with the same number of anchors and fewer mooring lines per cage.

Diver and visual surveys indicate the ocean terrain in the expanded area is the same as the current area that is moderately sloping, barren sandy bottom. Water depth under the farthest of the additional cages will be between 150 ft. and 170 ft. and the depth of the anchors at the far reaches of the grid will be around 250 ft. The waters along Oahu's South facing shore experience a predominant pattern of East to West current flow in the range of 0.5 to 2 knots.

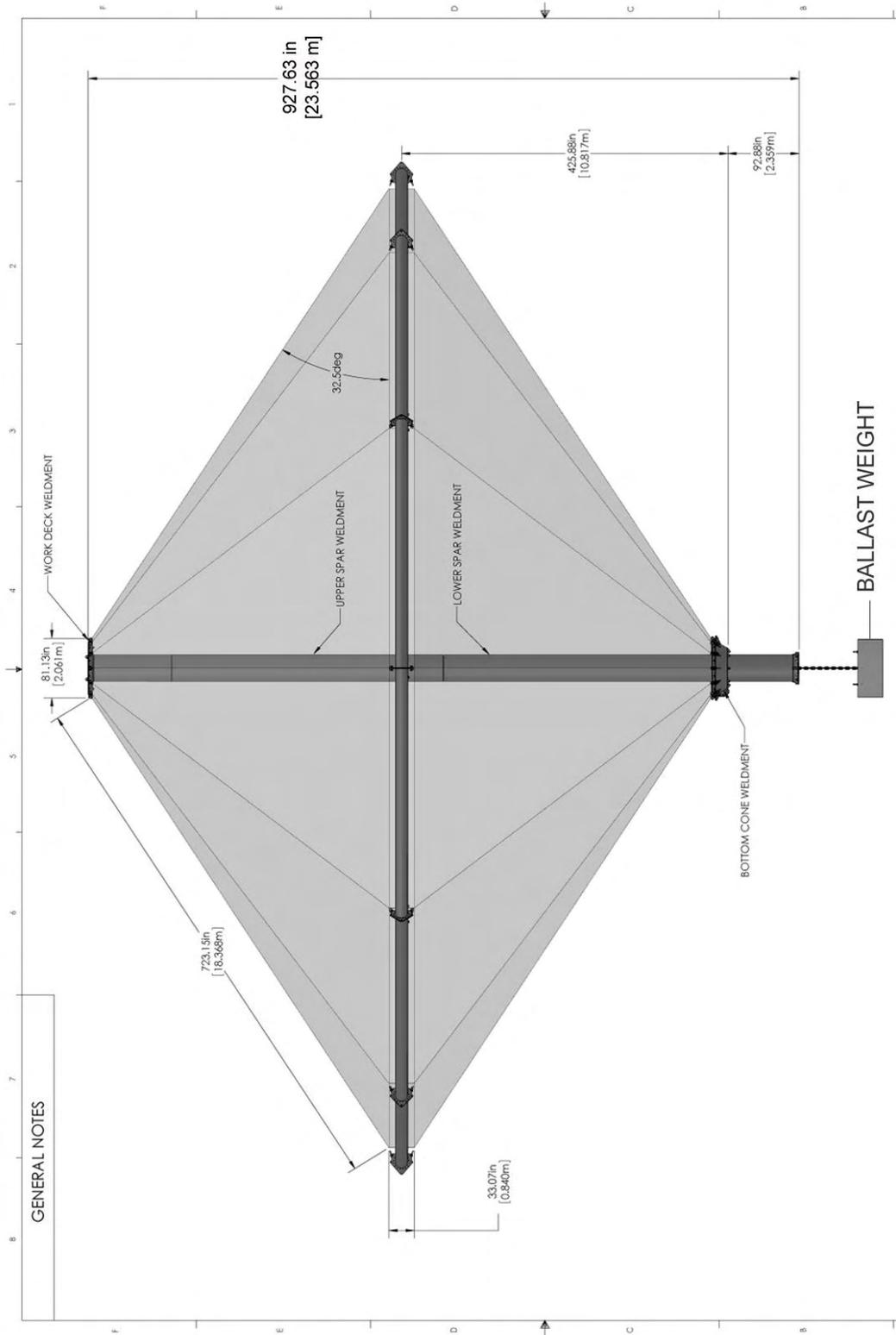


Fig. 4a. Individual Ocean Spar SS6000 cage, side view.

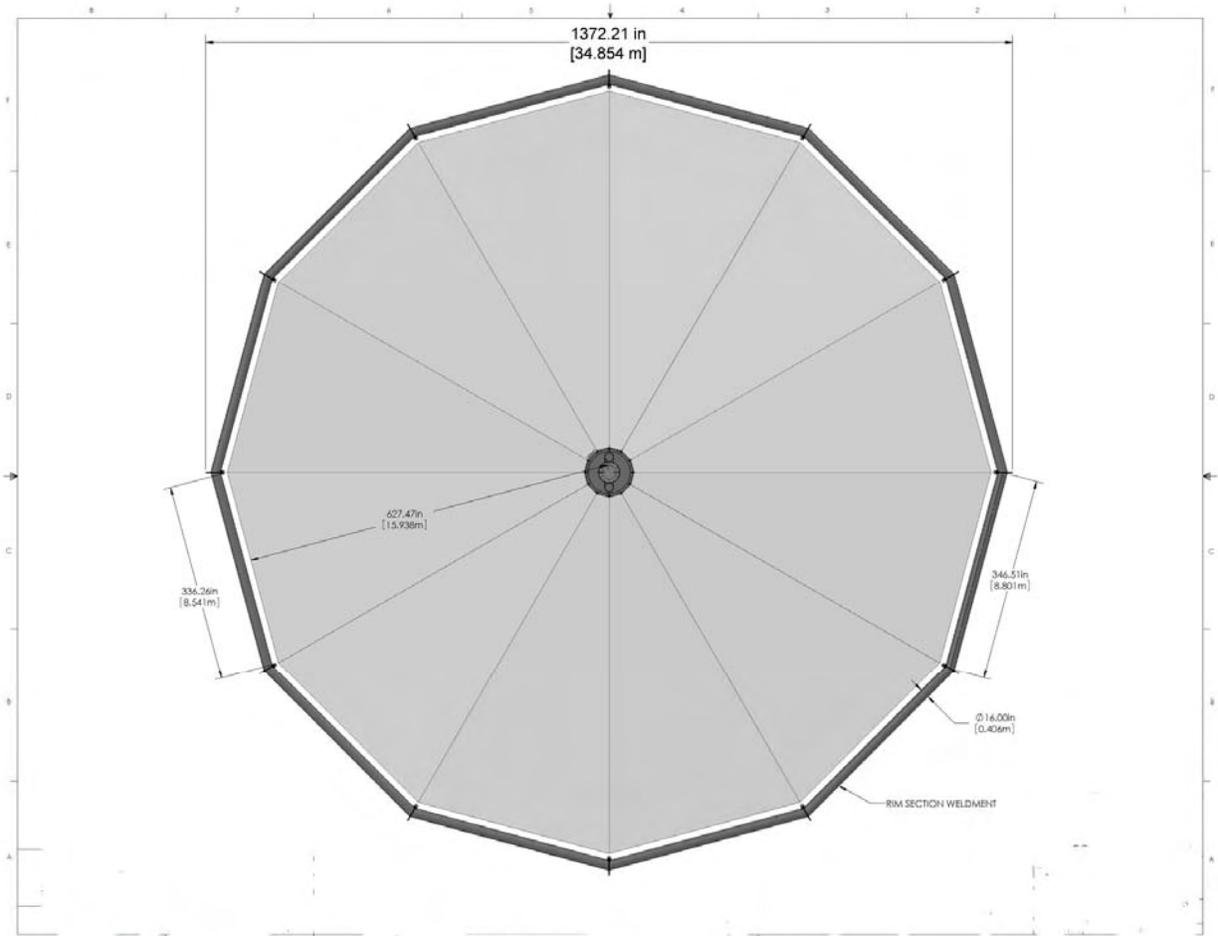


Fig. 4b. Individual Ocean Spar SS6000 cage, top view.

During the semi-diurnal tidal changes, twice per day, the velocity diminishes and in some areas may reverse or rotate in a circular pattern. The sea cage and its mooring system are designed to withstand sustained current in excess of 2.5 knots (L. Gace, pers. comm., 2008). In a 2002 test of currents adjacent to the cages, actual currents on the site rarely have exceeded one knot (Appendix 1).

The expanded area remains a rectangle with four corner points, described by the following latitude and longitude coordinates:

Northeast Corner: 21.2904 N Latitude; 158.0049 W Longitude.

Northwest Corner: 21.2899 N Latitude; 158.0093 W Longitude.

Southeast Corner: 21.2852 N Latitude; 158.0041 W Longitude.

Southwest Corner: 21.2846 N Latitude; 158.0085 W Longitude.

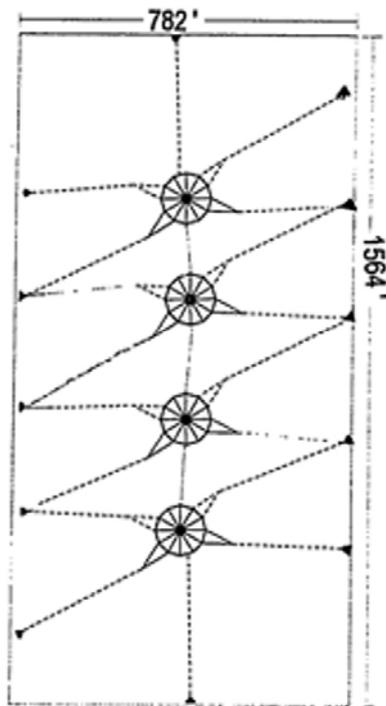


Fig. 5a. Current approved cage layout.

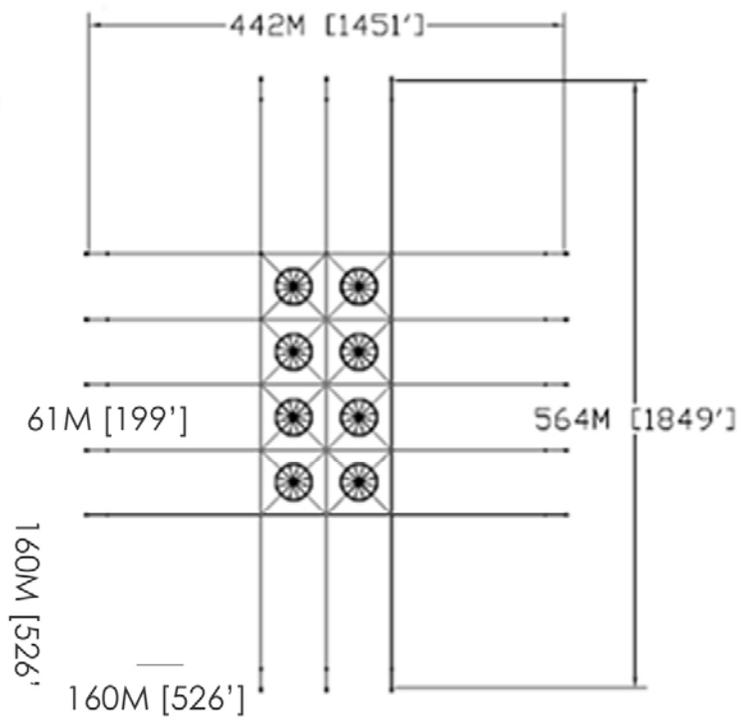


Fig. 5b. Proposed expanded cage layout.

It is requested that a feed/security barge be permanently attached to the mooring grid and be moored (24/7) at more or less the center of the expanded lease and attached to the mooring grid. The barge is will be 70 ft. long, 24 ft. wide, and approximately 6 ft. above the sea surface and will be similar to the smaller prototype currently in use (Fig. 6). The platform will support remotely controlled fish feeding, remote video monitoring of stock and cages, security telemetry, and raising and lowering of cages for maintenance. All telemetry equipment and frequencies will be approved technology. Coast Guard approved lighting and appropriate signage will be utilized.



Fig. 6. Prototype feed and security barge on site.

3.1.2 Major Operational Characteristics

HF proposes to build on the experiences and innovations of a total of seven years of successful commercial operation to expand the fish farm. In general, operational procedures will be the same as those successfully developed and utilized to date without any significant incidents. Key aspects of operation are reviewed below.

Culture System

The expanded culture system will consist of eight SS 6000 series sea cages, with high strength netting and a mooring grid made up of high strength bridles, lines, chains and anchors. These cages were designed for offshore aquaculture by Ocean Spar LLC, who provides expert installation and follow up advice. A single cage is bi-conical in shape with a frame of steel tubing, similar to the smaller version. The size of an individual cage is approximately 104 ft. in diameter by approximately 77 ft. in length and an internal volume of 6000 m³ (Fig. 4 a & b). A vertical buoyant cylinder that keeps the cage up right is in the center of the cage.

The cage frame is covered with a tight 35 mm (1.378 in.) mesh netting of a “Spectra” fiber- an extremely strong, UV resistant synthetic material developed by NASA. Divers enter through zippered openings in the mesh. Over the past seven years this type of cage has been successfully operated in diverse open ocean environments and weather conditions around the world, e.g., Cypress, the Philippines, Spain, Portugal, the Bahamas, Puerto Rico and New Hampshire.

The central spar controls the buoyancy of the cage, allowing it to be raised or lowered in the water column. The cage maintains its upright position by utilizing a 14,300 lb. cement ballast weight attached to the bottom of the spar and resting on the substrate. During normal operating conditions, the cages will be submerged 30 to 40 ft. below the ocean surface and the base of the cages will be 30 ft to 60 ft. above the ocean bottom. Sixteen “Danforth” style anchors, each weighing 6000 to 8000 lbs. will be used in the mooring grid system designed by Ocean Spar. The anchors are designed for securing large ships (200 to 300 feet in length) in sand and mud bottoms and have proven effective on the HF site (Fig. 7). A series of submerged buoys and weights will ensure that the anchor, chains and lines are perpetually taut.

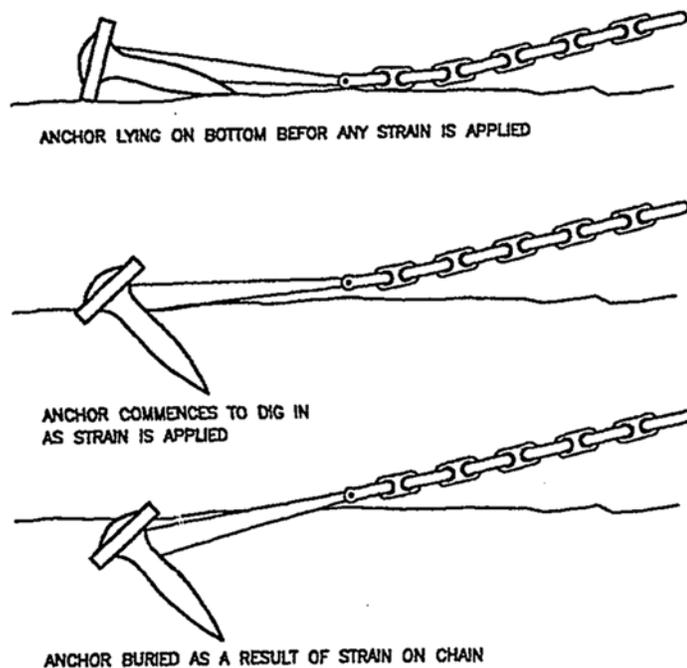


Fig. 7 Danforth anchor in operation.

Species Choice and Stocking

HF will continue to focus on the culture of the popular native species moi (Fig. 8). Moi, called locally the “fish of kings”, are under-supplied for local consumption to the local marketplace.

Reported yearly wild catch from 1997 to 2005 has averaged 690 lbs (DAR, 2008). The fish has a relatively long history of public and private sector aquaculture research and development; hence there is a solid information base for continued culture improvement. For example, genetic mapping of the species has indicated that fish from around the islands are one genetic stock, thus wild brood stock can be sourced from anywhere in local waters.



Fig. 8 Fresh Moi being prepared for steaming.

CII and its successor company HF have produced over one million lbs. of fish and received great positive feedback from local market sales and limited mainland test marketing. Many well known local distributors and chefs associated with the Hawaii Regional Cuisine movement, such as Roy's Restaurants and DK's Restaurants, seek out locally produced products like moi to include in their preparations (see Appendix 2).

Stocking material, fingerling moi, will be produced from captive broodstock in HF's new hatchery at Kaelaeloa. Initial broodstock will be sourced from wild populations and occasionally replenished making stocking material genetically the same as wild fish. Fingerlings approximately 2 to 3 inches in length (two to three months old) will be truck transported in tanks to either the Company's Keehi Lagoon shore-side facility or Kaelaeloa Harbor for loading onto a boat with specially constructed transport tanks. Upon arriving at the lease site, stock are gently distributed into the submerged cages, with diver assistance, using hoses that carry fish and seawater into the enclosure (Fig.9). Grow out to market-size, approximately one pound, takes about seven months.



Fig. 9 Stocking of Moi fingerlings in submerged cage.

Feeding

Feeding of the farm stock will occur daily from the electronically controlled, central feeding barge. The barge will store a supply of pelletized, sinking feed, a portion of which will be distributed to each cage daily through hoses that carry seawater and feed pellets into the cage. Feeding schedules and quantities will vary per cage depending on the biomass present. Feed pellets are spread widely in a cage to facilitate consumption by all stock and to minimize wastage. The feed distribution will be electronically controlled and monitored by video cameras and divers, so as not to over feed. The Company has a strong economic incentive to carefully manage feed consumption and minimize wastage because it is the highest contributing unit cost to each unit of fish production.

The feed used is a commercially available, specially formulated slow sinking marine fish diet shipped in bulk from the mainland. The pellets are a mixture of fish meal, agriculture grains and a vitamin/mineral mix, with a crude protein content of 43%. No additives, such as hormones or antibiotics, are used. Company policy is upon request by DLNR and /or DOH, feeds can be tested by a mutually agreeable, third party laboratory to affirm composition and results will be provided to the agencies. Feed Conversion Ratio (FCR), feed fed divided by the fish produced, has averaged 2:1; generally considered acceptable for culture of a new marine fish species. Reduction of FCR' s will be a priority target of national and local research efforts, with a goal of reaching FCR' s achieved in the global salmon industry after years of research, i.e., 1.1:1 (NOAA, 2008).

Harvesting

Harvesting of market sized fish of about 1 to 1 ¼ lbs. from a submerged sea cage is an intricate operation that utilizes a custom surface vessel and commercially available fish pump to move fish to the surface (Fig 10). Divers inside the cage “herd” marketable fish to a portion of the cage, where they are gently pumped to the deck of the support vessel. On the vessel, fish slide into one of two large ice-brine slurry baths to quickly disable them with minimum damage. Fish are then transported whole in the slurry to HF’s Keehi Lagoon facility for off loading into containers that are destined for a local wholesaler .No fish processing occurs at sea during harvests and solid waste disposal is the responsibility of the wholesaler and other buyers that process the fish.



Fig. 10 Moi being harvested from submerged cage using a pump.

Security and Maintenance Procedures

HF staff will be monitoring the lease site every day, seven days a week, while carrying out stocking, feeding, harvesting and maintenance. These activities and the staff presence will provide a high measure of security for the operation. Video surveillance cameras will be set up to have 24/7 observation of critical areas.

Cage maintenance is of three types: 1) Inspection of stock for mortalities and their removal 2) Repair of various cage components, including the spar, support cables, anchor system, and net enclosure, and 3) Cleaning of the cage netting and mooring lines. According to the manufacturer, the design life of steel components is 15-20 years. However, due to the possibility of mechanical wear and abrasion, lines are inspected on a biweekly to monthly interval, and thus far this schedule has worked very well to avoid breakage problems.

The Spectra netting is designed to have a service life of 10-12 years. Regardless, netting is inspected regularly. If major repairs are needed netting is replaced. Minor repairs can be accomplished by divers, while the cage remains submerged.

Cleaning of attached algae and other marine growth on the cages is carried out by divers using a commercially available Power Washer that utilizes a jet of water to dislodge material (Fig. 11). Regular cleaning is important because when this material heavily coats the cage, it interferes with the free flow of seawater through the netting. Experience shows that cleaning every cage, approximately every two months keeps attached marine growth to a minimum and maintains water circulation. No chemicals are used in the cleaning process. Pulverized material is readily dispersed by the currents and assimilated and recycled by the ocean environment



Fig. 11. Powerwasher used to clean cages.

3.2 ECONOMIC CHARACTERISTICS AND IMPACTS

The expansion of HF's site and production capacity will impact the Hawaii economy in a number of ways, including through increases in employment opportunities, product availability in the local marketplace, expenditures in local support industries, and increased opportunities for Federal research dollars. The Company has plans to invest up to \$13 million dollars, from a combination of existing private funds and a Federal Fisheries Loan Program, which lends to marine aquaculture. The existing project has already obtained a loan from this Federal program.

Current company employment is 11 local people in its hatchery and offshore operation. With phased build out of the hatchery and approval of the new cages, HF anticipates increasing staffing to 10 in the hatchery and 15 in the administration and grow-out operation. Jobs will require a variety of skills from, for example experienced divers and hatchery technicians to accounting and marketing specialists. Company policy is to hire Hawaii residents, whenever possible, and it anticipates developing internship programs and other mutually beneficial relationships, with local high schools, colleges and universities, to help create the labor pool for industry expansion (see Appendix 2).

Plans are to phase up production to five million lbs. per year over a three year period. Maximum individual cage production is estimated at 625,000 lbs. per cage per year, with multiple crops. It is estimated Hawaii consumes over 50 million lbs. of seafood a year, with 80 % being imported mostly in a processed form (ADP, 2008). HF will focus initially on contributing to satisfying local demand for moi and import substitution before considering exporting. Public comments over the years to the project principal strongly indicate that participants in the local seafood industry and fish-loving residents welcome year-round, increased availability of fresh, high quality moi (see Appendix 2). Supply from the wild is limited in quantity and seasonal due to fishery regulations and moi populations are small and too dispersed to be regularly targeted by commercial fishers.

Estimated wholesale value of HF production at full scale is projected to be \$ 20 million, with a projected wholesale market price of \$4.00 per lb. The State budget will benefit from increased personal income tax and corporate taxes, as well as lease rents paid to DLNR, which increase with the amount of production. Significant economic impacts on support industries will be fostered through: sales to the wholesale and retail fish trade; processing and packing activities; use of transportation providers; and company purchase of services, equipment and supplies.

The Hawaii offshore aquaculture industry has benefited from close collaboration with the research capabilities within the UH System, as well as with the internationally known Oceanic Institute. A thriving commercial aquaculture sector will provide an added basis for these entities to write research proposals and compete for federal grants to improve industry technology and economics. Federal research dollars coming to Hawaii not only expand the knowledge base, but create jobs and bring valuable revenue into the state.

3.3 SOCIO-CULTURAL CHARACTERISTICS

3.3.1 Multiple Use Conflicts

The Company has been on the present site for ten years (including the research project) and has not experienced any user conflicts with the public, that is, not a single complaint. The approximately two mile distance from shore and water depth of 140 ft. or more in the vicinity, coupled with the sand bottom and lack of natural relief, does not make the area conducive for diving or fishing. With cages submerged 30 to 40 ft. below the surface, the limited boat traffic

has transited the site readily and has cooperated with the Company's farming activities. HF will continue to make a significant effort to inform and engage the interested public and as the operations expand to anticipate and resolve any issues. The ongoing approach to communication with the public has been "one on one" onsite discussions by staff with the interested boaters, and also the Company will continue being an active and involved member of the Oahu marine community.

HF is, however, requesting that access to the expanded site be more controlled in the amended lease than with the previous operations. The existing CDUP and lease have allowed the boating public to freely transit the site, but maintained exclusive use of the area encompassing the submerged cage systems, i.e., no access to the immediate cage area or its interior, as the caged fish are considered private property. The relatively rare incidence of recreational and commercial divers on site was discouraged. Sea cages over time become a Fish Aggregation Device (FAD) and at times concentrations of popular sport or food species can occur that can attract divers and fishers. At these times, HF has actively discouraged anchoring within the mooring grid due to serious concerns over public and staff safety and the potential for entanglement.

With the expanded site and in necessary consideration of: staff and public safety (i.e., the cages that are anchored in very deep water that greatly increases diving risks for recreational divers), the expanded and busier site and company insurance liability, HF is formally requesting that no snorkeling or SCUBA diving or anchoring of any boat be allowed in the lease area. Appropriate signage noting the restrictions will be posted on the feed/security barge. Boats may continue to transit the area, including the area directly over the submerged cages and continue to troll or drift fish at the site. HF currently maintains a close and mutually beneficial relationship with some local fishers that frequent the site and views this relationship as an important part of the Company's security effort (see Appendix 2).

3.3.2 Cultural Resources

Chapter 343, HRS, as amended, requires that any Environmental Assessment (EA) identify and assess any potential impacts of a proposed project on cultural practices and resources. As previously described, the open ocean site does not contain any known historic resources or traditional and culturally important sites and none have been pointed out in seven years of operation. This was confirmed by a recent interview with a knowledgeable Hawaiian fisher and several meetings with the EWA Beach Neighborhood Board (see Appendix 3). However, commercial fishers, both Hawaiian and non-Hawaiian, do come to the site to take advantage of the occasional aggregations of fish, such as opelu (see Appendix 2). Reportedly, occasional catches of opelu have increased at the site and with greater numbers of sea cages, this periodic positive impact should continue. HF will continue to cooperate with any visiting commercial fishers to the site, within its need for a greater degree of exclusivity, as described above.

3.3.3 Other Characteristics

Two nearby ocean activities are of note, one new and one ongoing. The DAR, DLNR is proposing a 108 acre artificial reef to the West about 1 mile off Kalaeloa in 60 to 120ft. of water—currently in the permit process (OEQC, 2007). This site is approximately three miles from the HF site and downstream of the prevailing current. Given the distance and the current pattern, no impacts are expected on HF's expanded activities or on users of the artificial reef.

The ongoing activity occurs in a large unmarked area to the Northeast of the HF site, roughly

opposite the entrance to Pearl Harbor. This area is occasionally used by the Navy for various training exercises. Over the years, the Company and the Navy have developed a high level of cooperation in the execution of these periodic exercises. This mutually beneficial cooperation will continue with the expanded activities at the site, which will be seaward and away from the Navy training area.

Importantly, increasing wild populations of moi have been a target of State stock enhancement efforts by the DLNR's Anuenue Fisheries Research Center, in cooperation with the Oceanic Institute. When the HF hatchery produces excess fingerlings for stocking its cages - commercial hatcheries routinely plan excess production to be certain to accommodate stocking needs - then the opportunity exists for HF, under the direction of DLNR, to provide fingerlings to the State to help with restocking efforts. Benefits to wild moi populations and fishers statewide would accrue from these cooperative efforts.

3.4 ENVIRONMENTAL CHARACTERISTICS

3.4.1 Operations

The basic environmental characteristics of the expanded project will be similar to those of the existing farm, though the production levels will increase and the number of personnel on site and level of daily activity will increase in proportion to the build out and stocking of the larger sea cages.

Boat traffic to and from the site will consist of one or two motorized vessels. Boats will be powered by standard diesel engines. Noise levels will be no more than boats of comparable size.

Cages will remain submerged at all times, except in the event of major net replacement. Raising and lowering of cages is done with compressed air and there are no engines or petroleum products involved. Cages will be cleaned regularly by divers with power washers deployed from a work boat (Fig.11). As previously described, currents readily disperse the particulate organic material removed from the cage to be assimilated and recycled by the ocean environment.

There will be a permanently moored, low profile feed/security barge at the site, similar to, only larger than, the prototype pictured in Fig. 6. Feeding will be observed by cameras and divers, so as not to overfeed. Experience shows that any feed not consumed and fish waste products (dissolved and feces) are readily dispersed by the currents or consumed by other organisms. Water quality monitoring has indicated waste products (nutrients) are rapidly dispersed and assimilated by the open ocean environment. The barge will have signage and lighting as required by the Coast Guard.

Routine stocking and harvesting will be supported by surface vessels with electric or gasoline powered pumps that move fish through large, flexible hoses to and from the cage (Figs. 9 and 10). These operations, which use the same basic technologies previously used by the Company to date with no operational problems, are also supervised by divers.

3.4.2 Increased Fish Production

The SS 6000 sea cages have about twice the volume of the existing SS 3000 cages, allowing stocking and grow-out of roughly twice the number of fish per cage. As such, there will be proportional increase in feed used per cage, but these inputs and outputs will be spread over

the larger cage volume and the larger lease area. Maximum fish densities (weight per unit volume of water, e.g., kg/m³) will remain roughly the same as the current operation (approximately 30 kg/m³), which represents good management practice. Similarly, densities of feed fed and fish waste products excreted should be similar to those observed with the existing farm. Therefore, impacts of the greater fish production per cage on the water column and substrate under each cage should remain insignificant, as demonstrated by experience to date. Moreover, with the strong currents, short residence time of water in the cage and high level of mixing at the open ocean location; coupled with a suitable ZOM, the site can be expected to meet State receiving water standards.

3.4.3 Proximity to a Coral Reef

Potential impacts on coral reefs are a concern for all ocean projects in Hawaii. The closest coral reef to the project is located in a shoreward direction to the North Northwest approximately 1800 ft. (Fig. 3). Coral heads sit on top of a ledge that rises sharply from a depth of 85 ft. to a depth of 50 ft. Coral covers about 8% to 12% of the total area at the top and coral cover increases going shoreward.

The expanded project should not affect the coral reef. The HF project included in its initial monitoring program a water quality station near the reef. Repeated sampling showed no effect from the fish farm. Prevailing currents carry water originating at the farm away from the reef. Moreover, expansion activities will be in the seaward direction away from the reef.

4.0 ALTERNATIVES TO THE PROPOSED ACTION

4.1 PREFERRED ALTERNATIVE

The initial CII site was selected because of its proximity to the HOARP site. HOARP successfully demonstrated open ocean cage culture with submerged cages was environmentally sound and potentially scalable to achieve economic viability. Briefly, important site determination factors that were considered at the time of HOARP site selection included: optimum current speeds (around 2 kts or less); water depth of around 150 ft.; adequate distance from shore for open ocean conditions (no land influences and adequate mixing); barren sand or mud bottom; protection from severe storms; absence of competing recreational and commercial uses; and reasonable proximity to available harbor support facilities.

These site selection factors were re-evaluated by HF to determine the technical and environmental feasibility of doubling the existing lease area by moving seaward and increasing production capacity by four fold. The evaluation revealed that expanding the site area and converting the sea cages to the larger volumes would not change the acceptability of this larger area for large-scale open ocean farming. Impacts of the existing project on water quality and substrate quality have not been significant at the current location due to the strong and consistent currents that facilitate mixing and the high assimilative (uptake) capacity of Hawaii's nutrient poor, subtropical ocean environment. Expansion of site area and production capacity together, should be able to be accommodated within required State receiving water standards and Zone of Mixing regulations. The Company's seven years of site experience and continuous data collection to monitor the existing project impacts at this location suggest that expanding the ocean area and the production can be managed using HF's well understood operational practices.

HF views the existing successful cage operation at the current site as a starting point that has demonstrated technical, environmental and economic feasibility. Development of the existing farm to an economically viable business is the long-term Company goal. In addition, HF has made major investment in accessible hatchery and support facilities in proximity to the operation to further support expansion at this site as the preferred alternative.

4.2 OTHER ALTERNATIVES EVALUATED

Several alternative approaches to expanding moi production were considered by HF. The Company could increase the stocking density in the existing sea cages beyond the industry standard of 30 kg/m³. Consultation with experts in cage farming did not recommend this approach for moi, even with the strong and consistent current pattern at the site. Issues such as more stress on the stock and greater fish size differences within a crop, that can occur with greater fish densities, could reduce the value of fish in the marketplace.

Another option considered was to change the four SS 3000 cages to four SS 6000 series cages, without expanding the lease area, thus roughly doubling the production capacity of the existing site. Again, while the oceanography of the site would be able to accommodate the expanded production, the substantial investment in the new hatchery and other facilities and the goal of satisfying Hawaii's demand for moi, then moving to exporting, do not support this limited expansion alternative. In a related option, consideration was also given to increasing the number of sea cages on the existing site to eight of the larger type. Best practices for anchoring structures in the ocean, i.e., maintaining a ratio of anchor line to water depth of 7:1, precludes this alternative from further consideration, as the existing site is too small.

A final alternative considered was pursuing a suitably sized lease for a new site in the same general vicinity. A preliminary look along the Leeward Coast indicates there may be other suitable sites considering the uniformity of ocean topography and currents. However, recreational and commercial use in some candidate areas, location of domestic waste outfalls, and various restricted areas along this coast, will make identifying a suitable and available area a challenge. Moreover, operating two sites would greatly impact logistical efficiencies and operating costs, as well as, increase financial risk for the Company at this stage of development. Consolidation of facilities expansion at a known and contiguous location is the preferred alternative for growth.

4.3 NO ACTION ALTERNATIVE

The No Action Alternative would mean the fish farm would not expand and would remain at its current size. Moi production for the local market would remain limited and supply statewide would continue to be inadequate. Economic benefits of the proposed expansion would not be realized e.g., no increase in employment, no increase in direct and indirect expenditures, and opportunities to further refine sustainable open ocean aquaculture technologies for Hawaii and an emerging global industry sector would be lost. Hawaii could lose a new, environmentally sustainable supply of seafood and the Company would not be able to achieve its business goals and economies of scale. Thus the No Action Alternative is unacceptable.

5.0 DESCRIPTION OF THE ENVIRONMENT

5.1 REGIONAL SETTING

The farm site is located in oceanic conditions approximately two miles off Ewa Beach on the Leeward Coast of Oahu. Coastal features of note in the region are the entrance to Pearl Harbor, which is approximately two miles to the East and Barbers Point and Campbell Industrial Park about five or six miles to the West. In addition, there are two domestic waste outfalls in Mamala Bay, the Sand Island Outfall about four miles away to the East and the Honouliuli Outfall about one and a half miles away to the West (Fig. 2). Further West is the oil tanker unloading facility off Barbers Point.

5.2 CLIMATE

The prevailing weather pattern throughout the Hawaiian Island chain is Northeast trade winds, which blow around 80% of the time at an average of 8 to 12 kts. Kona winds, where the direction is from the Southeast or Southwest, occur about 20% of the time (Juvik, et al,1998). On Oahu, the Koolau and Waianae mountain ranges provide some shelter to reduce the intensity of wind, rain and seas generated by trade winds, making the near shore coastal waters of South facing shores of the Islands attractive for offshore sea cage culture.

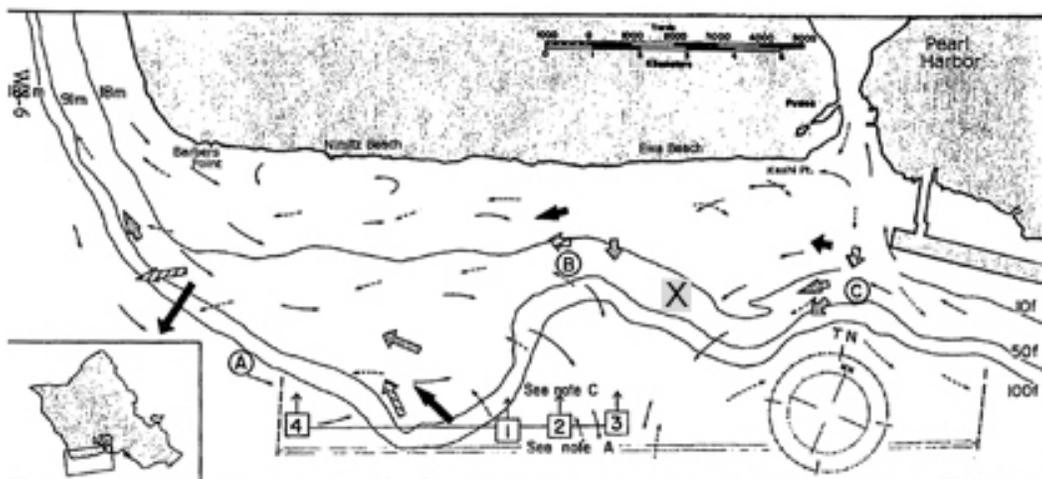
5.3 OCEAN SETTING

5.3.1 Waves and Currents

Wind generates two types of waves: 1) sea that is caused by prevalence and intensity of wind in specific areas; and 2) swell or the wave, whose origin may be distant storms, that continues to travel without relation to local winds. Swell will break to form surf that is in direct relation to the size of the wave and the depth of the rising bottom.

The prevailing surf break off Ewa Beach was observed to have no effect on the bottom two miles offshore at 150 ft. Moreover, prevailing wave patterns and seasonal swell in the area have not significantly interfered with daily farm operations to date.

The variable oceanic currents in the vicinity of the Hawaiian Islands are believed to depend mostly on the velocity and direction of the wind. Tidal currents are generally weak. The waters along Oahu's South facing shore experience a general pattern of East to West flow in the range of 0.5 to 2 kts. During the semi-diurnal tidal changes, twice per day, the velocity diminishes, and in some areas reverses in a circular motion (Fig.12). Measurements during the HOARP project and more recently in 2002 by Ocean Spar (Appendix 1), as well as numerous subjective observations made by project personnel over a seven year period, confirm the direction and shifts in current. Notably, these observations indicate speed rarely exceeds one knot.



LEGEND

CIRCULATION	NET DRIFT		
	STRENGTH	OCCURRENCE	SEASON
FLOOD	WEAK	VARIABLE	FEB-APR
EBB	MODERATE	CONSTANT	MAY-JUL
	STRONG		AUG-OCT
			NOV-JAN
			ALL SEASONS

(A) (B) (C) CURRENT ROSE STATIONS AS APPLICABLE

X Location of HF cages

NOTES:

- A) Flood & ebb directions in this sector are shown for semidiurnal & mixed predominantly semidiurnal tides. Strong diurnal flooding flows move east & ebbing flows move west.
- B) Net transports are as indicated seasonally.
- C) Strong semidiurnal & mixed semidiurnal tidal flows converge (flood) & diverge (ebb) in area:
 - 1 Feb-Apr
 - 2 May-Jul
 - 3 Aug-Oct
 - 4 Nov-Jan

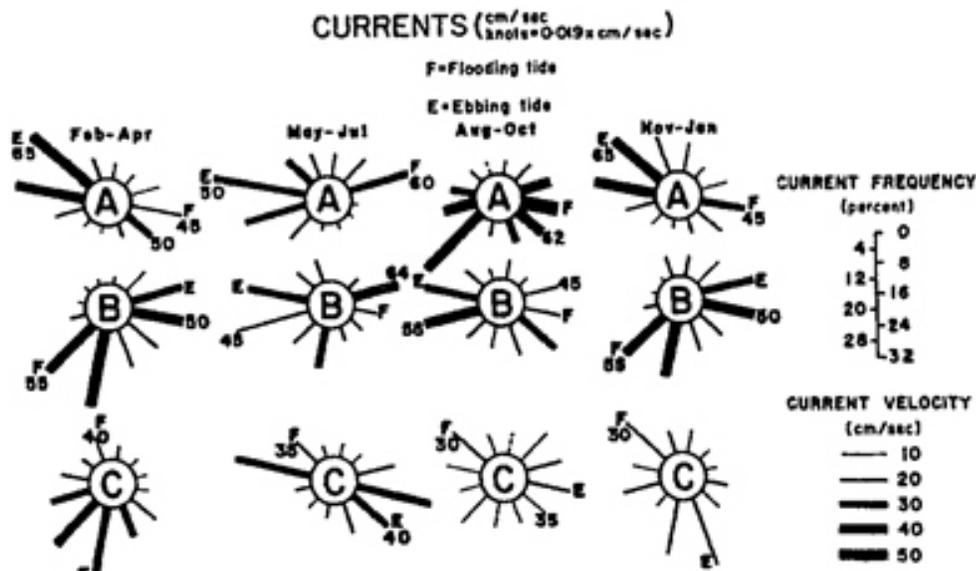


Fig. 12. Current patterns in the vicinity of the Hukilau Foods site.
 (Source: K. Bathen, 1978)

5.3.2 Water and Sea Floor Quality

Water Quality

The HF site is located in oceanic conditions and is classified by the CWB, DOH, for monitoring purposes as subject to wet criteria for open coastal waters. Specific regulatory criteria governing receiving water standards for discharges into these waters are found in Table 1.

Table 1. Specific criteria for open coastal waters based on Hawaii Administrative Rules, Title 11, Department of Health, Chapter 54, Water Quality Standards which apply to Receiving Water Limitations for a Wet Location.

Parameter	Geometric mean not to exceed the given value	Not to exceed the given value more than 10% of the time	Not to exceed the given value more than 2% of the time
Total Nitrogen (µg N/L)	150.00*	250.00*	350.00*
Ammonia Nitrogen (µg NH ₄ -N/L)	3.50*	8.50*	15.00*
Nitrate + Nitrite (µg [NO ₃ +NO ₂]-N/L)	5.00*	14.00*	25.00*
Total Phosphorus (µg P/L)	20.00*	40.00*	60.00*
Chlorophyll a (µg/L)	0.30*	0.90*	1.75*
Turbidity (NTU)	0.50*	1.25*	2.00*

pH units – shall not deviate more than 0.5 units from a value of 8.1.

Temperature – shall not vary more than 1 deg. C from “ambient conditions”.

Salinity – shall not vary more that 10% from natural or seasonal changes considering input and oceanographic factors.

Dissolved oxygen – not less that 75% saturation.

* “wet” criteria apply when the open coastal waters receive more than three million gallons per day of fresh water discharge per shoreline mile.

HF has been required to monitor the existing site by CWB, DOH for important water quality parameters to fulfill the requirements of its NPDES/ZOM permit. A qualified consultant was hired for this purpose. Basically, the water quality monitoring program establishes sampling stations within (near the cages) and on the down current edges of the permitted ZOM (Fig. 13). Each station was sampled at three depths; surface, mid-depth and near the bottom. Stations are established on the Eastern and Western edges of elliptically shaped ZOM in areas of maximum water flow; Z 6-9 and Z 1-4 respectively. In addition, stations on the Eastern and Western sides of the cages, within the ZOM, were also monitored; E 1 and C 1-2. The summary values for sixteen monitoring surveys are presented in Table 2. It should be noted that since stations Z 1-4 were down current at times and Z 6-9 were down current at other times due to tidal action, for reporting purposes, the results of Z-1 and Z-9, Z-2 and Z-8, Z-3 and Z=7 and Z-4 and Z-6 were combined.

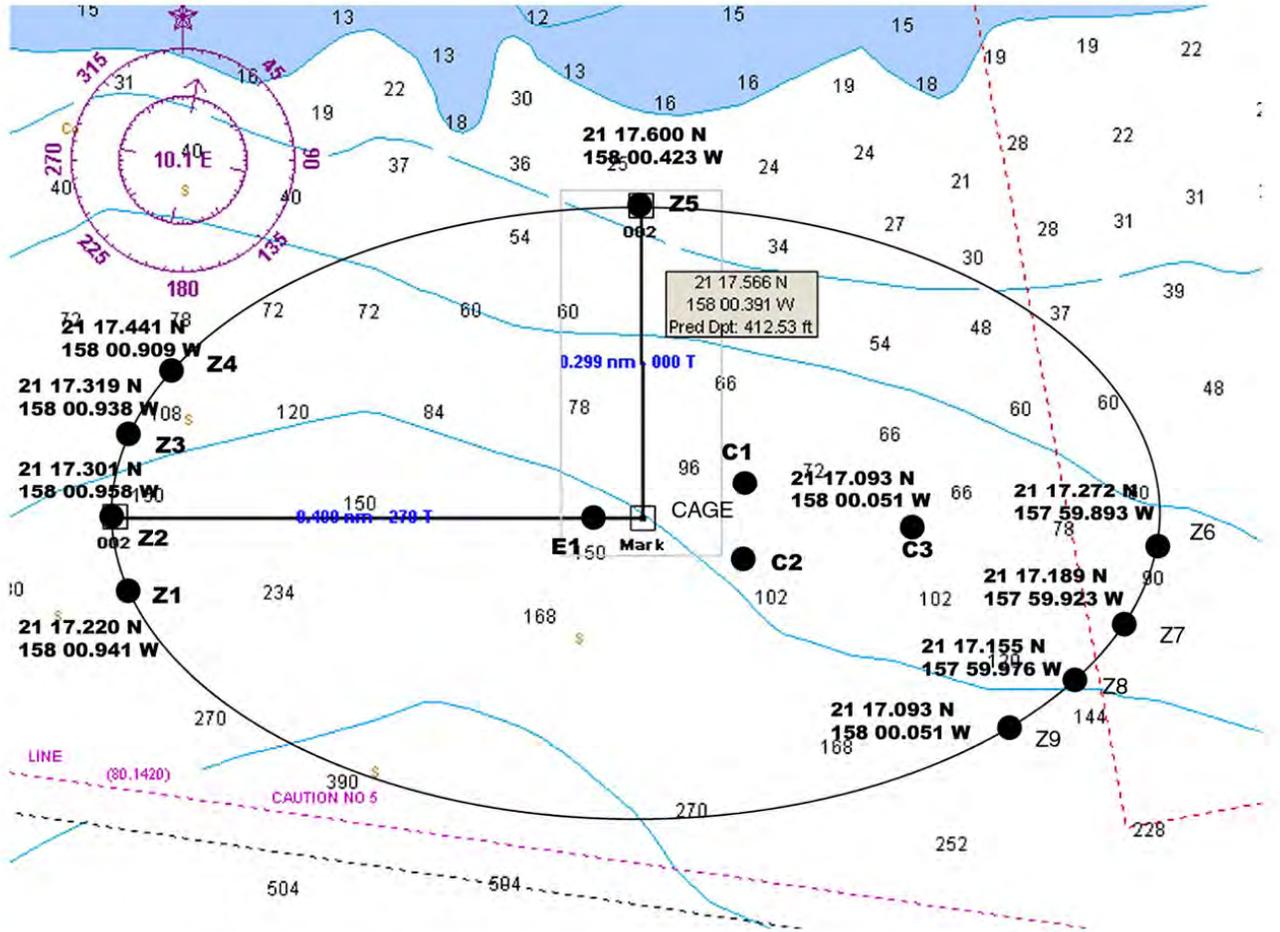


Fig. 13. Map of water quality sample station locations and Zone of Mixing. Depth in feet.

Results indicate that all the values from all the sampling depths are less than the wet criteria used by DOH to establish receiving water standards, that is, ambient oceanic water conditions are found at the edges of the ZOM as required (Table 2). Further, results indicate both the existing and proposed site are in open ocean conditions.

Sea Floor Quality

The sea floor at the Ewa Beach site can be described as a gently sloping sandy bottom at an approximate slope of 12:1, i.e., for every 12 ft. of distance seaward the depth drops 1 ft. During the initial CII project siting, a team of divers inspected a circular area emanating from the site center roughly 1800 to 2000 ft in all directions. The terrain was described as consisting of sand and virtually barren. No large concentrations of benthic animals and plants were observed at the time.

Table 2. Geometric means of water sampled during 16 monitoring surveys at Zone of Mixing stations in the vicinity of the Hukilau Foods Ocean Farm. Also shown are State of Hawaii Dept. of Health specific “not to exceed” geometric means criteria for open coastal waters under wet (DOHGM-W) conditions.
S = surface, M = mid-depth, B = bottom sampling.

Station	TN (µg/L)	NH ₄ ⁺ (µg/L)	NO ₃ ⁻ (µg/L)	TP (µg/L)	PO ₄ ³⁻ (µg/L)	Si(OH) ₄ (µg/L)	O ₂ % sat	O ₂ mg/L	Turbidity NTU	pH	Temp. deg. C	Salinity ppt
E 1 - S	126.41	0.53	1.21	10.92	1.72	63.91	102.32	7.02	0.11	8.160	25.90	34.90
E 1 - M	111.59	0.70	0.90	10.73	1.61	68.80	97.97	6.73	0.10	8.163	25.83	34.97
E 1 - B	117.87	0.82	0.89	10.26	0.90	49.43	97.59	6.71	0.10	8.159	25.65	34.97
C 1 - S	117.61	0.97	1.02	10.05	1.11	51.13	102.52	6.81	0.10	8.162	25.99	34.77
C 1 - M	115.15	0.93	0.82	10.57	1.28	46.67	96.88	6.47	0.10	8.164	25.90	35.00
C 1 - B	108.95	0.70	0.89	10.31	1.23	51.01	97.15	6.52	0.10	8.160	25.51	35.02
C 2 - S	112.81	1.16	1.08	10.39	0.95	59.20	102.37	6.80	0.11	8.163	26.03	34.92
C 2 - M	112.63	1.12	0.85	10.57	1.38	40.21	97.24	6.49	0.09	8.165	25.93	34.99
C 2 - B	106.59	0.95	0.67	10.45	1.64	45.71	97.31	6.53	0.10	8.163	25.54	35.02
Z 1 - S	104.52	1.13	0.89	10.50	1.41	58.87	104.14	6.91	0.11	8.155	26.04	34.95
Z 1 - M	121.87	1.22	0.80	10.41	1.56	62.24	97.28	6.46	0.10	8.162	25.93	35.00
Z 1 - B	115.61	1.13	0.74	10.85	1.62	47.58	97.46	6.50	0.09	8.160	25.73	35.01
Z 2 - S	118.02	1.94	0.77	10.25	1.55	52.23	102.85	6.82	0.11	8.160	26.05	34.97
Z 2 - M	109.80	1.57	0.70	10.11	1.96	45.08	97.35	6.47	0.09	8.164	25.91	35.00
Z 2 - B	99.99	1.50	0.88	9.91	1.29	40.04	97.51	6.50	0.10	8.164	25.72	35.01
Z 3 - S	112.51	1.57	1.17	9.91	1.40	53.45	102.36	6.79	0.12	8.156	26.05	64.97
Z 3 - M	104.80	1.33	1.12	9.99	1.59	47.53	97.27	6.47	0.10	8.163	25.92	35.00
Z 3 - B	97.94	1.25	0.96	10.00	1.69	39.95	97.39	6.50	0.10	8.163	25.71	35.01
Z 4 - S	103.64	1.37	1.17	10.54	1.43	48.67	102.40	6.79	0.13	8.156	26.04	34.97
Z 4 - M	104.83	2.50	1.00	10.90	1.63	39.95	97.54	6.48	0.10	8.163	25.91	35.00
Z 4 - B	112.11	1.52	0.97	9.96	1.47	50.01	97.86	6.53	0.10	8.164	25.70	35.02
DOHGM-W	150.00	3.50	5.00	20.00			*		0.50	**	***	****

- * Dissolved oxygen shall not be less than 75% saturation.
- ** pH shall not deviate more than 0.5 units for a value of 8.1.
- *** Temperature shall not vary more than one degree C from ambient conditions.
- **** Salinity shall not vary more than 10% from natural or seasonal changes.

Regular benthic sampling is also required for the DOH NPDES/ZOM permit maintenance and ten reports have been submitted. Again, control sites were established for comparison to sites underneath and near the cages to monitor farming impacts on the ocean bottom. Control sites were established 1080 ft.(360 meters) up current(East) and 1170 ft.(390 meters) down current(West) from the center of the reference cage. Measurements made from replicate core samples included: species/community analysis, sand grain size and Total Organic Carbon (TOC).

Among invertebrates sampled (i.e., nematodes, crustacean, priapulids, supnculans), the numerically dominant polychaetes play a major role in sediment dwelling benthic communities and may be regarded as indicators of environmental quality (Baily-Brock, pers. comm., 2008). The two species of polychaetes that dominate the control sites were *Synelmis acuminata* and *Euchone sp. B*. In addition, *Pionosyllis hertercirrata*, a consistently widespread species around Oahu was found in limited abundance. These species are typical of undisturbed oceanic sandy bottom conditions in Hawaii (Baily-Brock, pers. comm., 2008).

Water clarity at the site is such that the expansion area has been observed for seven years. No large, resident concentrations of fish, invertebrates and plants have been observed. A 2008

visual survey by a SCUBA diver of the proposed cage expansion area confirms this conclusion and indicates the ocean bottom composition is the same as was previously encountered at the existing HF site and its surrounding area; slightly sloping, barren sand bottom (Fig. 14). By extension, the expansion site is likely to have the same or very similar polychaete species, species diversity and community structure as the undisturbed control sites being utilized in the permit monitoring.



Fig. 14. Photo of barren, sandy ocean bottom in proposed HF expansion area.

5.4 FAUNA AND FLORA

The existing HF site over time has acquired an assemblage of fauna and flora that can be described as “resident” species that stay in the vicinity for days to weeks or longer and “transient” species that stay in the vicinity for minutes to hours to days. Generally, species appear and disappear periodically on a semi-regular and irregular basis. The cage system provides a substrate for plants (micro- and macro-algae) and benthic invertebrates to attach. The cage system as a whole acts as a Fish Aggregation Device (FAD) for some pelagic and benthic fish species. Reef and pelagic herbivorous(eats plant material) fish were observed to graze on the attached plants to the point at times keeping the cage clean, while carnivorous(eats animal material) and omnivorous(eats both plant and animal material) fishes catch smaller species and also consume any uneaten feed and feces that escapes the cage.

During the HOARP Phase II project, the fish and invertebrates that were attracted to the SS3000 cage were intensively studied for one month. The results, found in Appendix 4, are generally representative of the species and shifts in populations observed consistently by

Company personnel over the years. More specifically, the listing is representative of the current site situation. The HF site is located 650 ft. seaward of the HOARP site.

In general, the community of fish and invertebrate species around the cages was dynamic in nature, but in a broad sense the movements are largely consistent and somewhat predictable over the timeframe of a year. To illustrate the changes, during the first few years of operation the most abundant resident species was a broomtail file fish (*Aluterus scriptus*), yet in 2002 this species disappeared and now occasionally returns in numbers. Occasionally during the year, large schools of mackerel scad (*Decapterus macarellus*) will congregate in the vicinity of the cages and this in turn would attract pelagic predators, such as false albacore tuna (*Euthynnus alletterates*). Other pelagic predator species frequent the site on a more regular basis, e.g., the blue ulua, (*Caranx melampygus*) and amberjack, (*Seriola dumerilli*); probably attracted by the resident population of ornamental species that builds up, e.g., butterfly fish (*Chaetodon* sp.) and surgeon fish (*Acanthurus* sp.). Sandbar sharks (*Carcharhinus plumbeus*) are periodic members of the cage ecosystem, but have posed no threat to divers or the fish stock to date.

Expectations are that the expanded cage culture project will attract a similar assemblage of marine animals and plants. In time, the mini-ecosystem, as described above and in Appendix 4, will develop and broadly reach a dynamic balance around each new cage making up the farm.

5.5 RARE, THREATENED AND ENDANGERED SPECIES

The main rare, threatened and endangered species of concern to Federal and State authorities in Hawaii are: the hawksbill turtle (*Eretmochelys imbricata*), green sea turtle (*Chelonia mydas*), monk seal (*Monachus schauinslandi*), and the humpback whale (*Megaptera novaeangliae*). Federally protected bird species do not frequent the area or forage in the vicinity.

The hawksbill turtle is infrequently seen in the main Hawaiian Islands and has not been observed at the HF site. Green sea turtles frequent the main Hawaiian Islands, though their principle nesting sites are in the Northwest Hawaiian Islands. Green sea turtles have been observed on occasion (two or three times a year) at the HF site and near the sea cages. These animals are transient and remain in the cage area for a few minutes to a few hours and are not affected by the farm activities.

Monk seal sightings rarely occur in the main Hawaiian Islands, though statewide there are usually a few sightings every year. Monk seals have not been observed around the HF cages.

Humpback whales winter in the Hawaiian Islands from approximately December to April every year. They are the focus of a large Federal-State co-managed ocean sanctuary that is largely in State marine waters, the Hawaiian Islands Humpback Whale National Marine Sanctuary (HIHWNMS). The South shore of Oahu is not part of the sanctuary and whales have rarely been observed in the vicinity of the site and never at the site.

5.6 OCEAN ACTIVITIES

Combining the initial three years of the HOARP project and the seven years of Company operation, provides ten years (over 2000 days) of nearly continuous observations of public use for the HF site and the proposed expansion site. Ocean sports such as canoeing and kayaking, have rarely been observed in the vicinity of the sea cages and jet skiing has never been observed. Curious recreational snorkelers and SCUBA divers in boats have occasionally (a few times a year) approached the area when work boats were on site, but have not lingered when

personnel explained what was going on and the potential for entanglement in anchor lines. Distance from shore and water depth act as a deterrent to these uses.

Occasionally recreational fishermen have come by and transited the site or trolled or drift fished near the site without incident, while farm work is going on. Staff has on such occasions, when boats wanted to anchor in the mooring grid, explained the problems that can occur and boaters have been cooperative in avoiding the area. Commercial fishermen have occasionally approached the staff to fish for aggregations of opelu that sometimes occur on site. HF has cooperated with commercial fishers to ensure that opelu fishing can take place without affecting operations (see Appendix 2). Moreover, HF considers its relationship with commercial opelu fishers as mutually beneficial and part of its site security plan.

5.7 SCENIC AND VISUAL RESOURCES

The current site and its proposed expansion area are located two miles offshore from the nearest land, the community of Ewa Beach. Visually, the proposed project at full build out will have minimal impact on the scenic viewscape from shore. Sea cages at the existing site have been operated submerged with no markers at the surface and the expanded project will be operated in a similar manner. The expansion is requesting a 70 ft long, 24 ft. wide and 6 ft. high feed/security barge be anchored permanently at the site. This low profile structure and the work boats that are periodically on site should be barely visible from shore and will not appear any different from normal boat traffic.

5.8 HISTORICAL AND CULTURAL RESOURCES

HF has had no cultural resource issues arise during ten years of operation on the site. Recent interviews with knowledgeable native Hawaiian fishers and cultural practitioners familiar with the location confirm there are no traditional fishing grounds or resources at the project location (Appendix 3). Water depth and distance from shore prevent some culturally based recreational uses, such as outrigger canoeing. Both native Hawaiian and non-Hawaiian commercial and recreational fishers have occasionally taken advantage of the habitat enhancement and fish aggregation characteristics of the sea cages. HF will continue to work with those individuals that request occasional access to the site for this purpose.

6.0 POTENTIAL IMPACTS AND MITIGATION MEASURES

6.1 SHORT-TERM IMPACTS

Moving cage materials to the site from Keehi Lagoon and assembling the sea cages themselves on site should take approximately 26 days, depending on weather, and have no significant impacts. Ocean Spar representatives, who have installed cages all over the world, will be in Hawaii to advise on the installation.

There will be short-term impacts on the water clarity and bottom sediments with the realignment of the existing and new mooring grid and installation of the four new cages. Lifting the existing Danforth anchors and the single ballast weight suspended from the center of each cage will result in minimal and short-term re-suspension (a matter of minutes) of soft sediments and sand. Likewise, when new anchors and weights are positioned for the grid, sediments will be disturbed for a short period of time. Any marine life within the immediate footprint of the repositioned or new anchors, which will cover a total of .025 acres, will be disturbed for a short time.

Observations of the growth of attached marine life at the site indicate they will readily repopulate.

The general installation plan to upgrade and increase the number of sea cages is to realign and expand the mooring grid to accommodate eight SS 6000 series cages. The existing four SS 3000 cages will be removed and eventually changed to the larger SS 6000 cages, as harvesting of each crop is completed. At the same time, the farm grid will be made more perpendicular to the prevailing currents to further enhance turbulent mixing.

Installation will generally be carried out as follows:

- Step 1: The existing four SS 3000 cages will be moved and secured within the existing site a few hundred yards to the West, in approximately the same depth of water. (Timeframe – About 3 days)
- Step 2: Some of the existing anchors will be moved to attach new anchor lines, so that the grid is capable of securing eight cages. A total of 16 anchors were used in the previous four cage configuration – the project was approved for 18 anchors – and 16 anchors will be used in the new grid layout for eight cages. Once the 16 anchors are moved in the new position, they will be connected using a series of lines, bridles, floats, and weights; similar to the current system. (Timeframe – approximately 14 days)
- Step 3: The newly deployed anchor grid will then undergo final adjustment of the tension in the system. (Timeframe – 2 days)
- Step 4: The four existing SS 3000 cages will be moved and attached to the newly repositioned grid. (Timeframe – Approximately 7 days)
- Step 5: Installation dates of the four new SS 6000 series cages will depend on the availability of stocking material from the hatchery (Timeframe – When undertaken a cage takes 2 days to set up and install, so a total of 8 days will be needed for all the cages)
- Step 6: As crops are harvested from the four SS 3000 cages, they will be replaced by SS 6000 series cages, so installation dates will vary (Timeframe – When undertaken, setup and installation takes 2 days per cage or 8 total days)

In summary, the realignment of the existing grid and the addition to the existing grid to accommodate eight cages, as well as, the reattachment of the SS 3000 cages to the new configuration will take approximately 26 days. As it becomes possible to attach the new SS 6000 cages and replace SS 3000 cages with SS 6000 cages, HF will notify DLNR in advance of each deployment. The completed new configuration with eight SS 6000 cages should be in place within one year of the initial realignment of the mooring grid. Factors affecting these timetables include: weather, harvestable fish in the existing four cages, and availability of fingerlings from the Company hatchery to stock the new cages.

6.2 LONG-TERM IMPACTS

6.2.1 Water and Sea Floor Quality, Existing and Projected

Water Quality, Existing and Expanded Site

The HF commercial site has been operational since February, 2001. Since that time, the required NPDES/ZOM permit monitoring program, approved in August of 2001, has taken and analyzed 16 sets of samples from thirteen sampling stations around the sea cages (Fig.13). Each station was sampled at three depths and yearly sampling frequency was quarterly (see Section 5.3.2 for more details).

A summary of the water quality monitoring results can be found in Table 2. Over this period of operation, there have been no violations of the DOH NPDES permit wet criteria. Analysis of samples showed that it was very difficult to detect any increase over ambient values in the measured parameters due to the short residence time of water in the cage, large volumes of ocean water available for mixing and high assimilative capacity of the nutrient poor Hawaii ocean environment. It should be noted the amount of ocean water passing through a single cage in a day, with a minimum current of .1 knot, is 217 million gallons (Ostrowski ,2001). These large volumes will greatly assist dilution and assimilation of waste products.

Moreover, HF believes the expanded production capacity on the expanded site would realize similar water quality results with the biomass involved, the expanded area proposed, the proposed realigned cage layout, and the strong, consistent current patterns in the area. Maximum fish biomass (weight per unit volume of water, e.g. kg/ m³) will remain roughly the same as the current operation, approximately 30 kg/m³, which represents accepted industry management practice. Similarly, densities of feed fed and fish waste products excreted should be similar to those observed with the existing farm. Therefore, impacts should remain insignificant.

Per DOH CWB regulations, an appropriate ZOM for the expanded project will be requested and it is anticipated it will be similar in size, though different in shape(extending more seaward), than the existing ZOM. A comprehensive monitoring program by a qualified consultant will be put in place. Should concerns over elevated nutrients arise, a number of effective mitigation measures are available to HF to control amounts of dissolved and solid waste inputs into the environment. These measures include: 1) modifying feeding schedules, 2) adjusting cage biomass, 3) altering cage cleaning schedules, and 4) adjusting the size of the ZOM.

Substrate Quality, Existing and Expanded Site

The ongoing benthic monitoring program for the existing site conducted by the University of Hawaii scientists has submitted ten reports summarizing results from the four previously described sampling stations around the sea cages (2 near the cages and 2 controls outside of cage influence). Yearly sampling frequency of sampling was approximately quarterly.

The most noticeable result of the monitoring was the change in polychaete species composition and abundance under the sea cages compared to the control sites. The species that dominated samples under the cage was *Ophryotrocha adherens* and near the cage was *Capitella capitata*. These species were absent in the two distant control stations. It is known these particular polychaete species are opportunistic and their presence are indicators of organic enrichment of the sediments. Both species tend to occur in marine environments that contain elevated

nutrients (Lin and Baily-Brock, 2008).

It is clear that the sea cages can elevate nutrient levels in the sediments underneath, which in turn have changed the ambient (common) species composition and abundance of polychaete species. While these shifts in species composition and abundance in the limited area under the cage and nearby are measurable, they do not have great ecological significance. Such changes are known to occur in benthic environments when nutrient enrichment occurs from any source. Moreover, it has been observed that when cages have been harvested and are empty for up to six months, species composition and abundance tends to shift back to that of barren sand, indicating these changes are reversible (Lin and Baily-Brock, 2008).

The expanded project will make several changes that will reduce the impact of the sea cages:

- 1) The cages will be realigned to the prevailing current pattern so that turbulent flow will increase, thus increasing dilution of waste products.
- 2) The new cages will be anchored in deeper water thus increasing the space between the bottom of the cage and substrate; allowing for greater mixing and assimilation of any particulate and dissolved waste products.

In addition, the benthic impacts will continue to be regularly monitored and mitigation measures to manage farm waste products are available if needed, including: modifying feeding schedules, adjusting cage biomass, and altering cage cleaning schedules.

6.2.2 Fauna and Flora

General Discussion

The existing and expanded sea cage farm will continue to attract marine life and essentially create a mini- ecosystem in what was a relatively barren part of the ocean. The sea cages and mooring system provide a substrate for attachment of animals and algae. The structures will attract a host of benthic invertebrates and algae, as well as, benthic, reef and pelagic species of fish (similar to State managed FAD system), that periodically take up residence for significant periods of time or are transient (Appendix 4).

The nutrient sources that help maintain the ecosystem include: uneaten feed, fish waste products and pulverized material cleaned from the cages. Ultimately, HF experience indicates this ecosystem is a dynamic mix of species that comes into a dynamic balance with the ocean environment around the cages. The impact of this cage ecosystem on near and distant organisms and habitat (e.g., recruitment of the larvae and juveniles of various popular species) is not considered significant given the relative size of the farm habitat and the large expanse of available natural habitat for reproduction and recruitment on the South shore of Oahu.

Disease Issues

There is a public concern about disease transfer from cultured stock to wild stock and a farmer concern of transfer of disease from wild species to the farmed species. HF is striving to be a leader in marine finfish biosecurity in Hawaii. The Company is diligent in applying best management practices to its operations, including inspection of fingerlings for disease prior to stocking, maintaining controlled feeding rates, utilizing acceptable stocking densities, and regular removal of fish mortalities and cage cleaning.

Stringent biosecurity procedures, adapted from large-scale marine hatcheries in Europe, will be adopted at the HF hatchery, including highly controlled access to the facility by visitors and managed movement of staff within the facility. Plans for the expanded farm include instituting disease testing at three stages of the grow-out process: stock going into the cage, at 4 months into the grow-out and just before fish are harvested. Should a disease event occur in the stock, State authorities (DLNR, DOA and DOH) will be notified and approved treatment and stock disposal procedures for aquatic species will be followed.

Escape of Stock

Escape of the cultured stock from the cage environment has been an issue raised in the consideration of Hawaii offshore aquaculture projects due to concerns over potential for transfer of disease to wild stocks from cultured stocks and genetic impacts of cultured fish on genetics of wild fish. To date, there has been no known escape of fish from HF cages over the seven years of commercial operation. Divers observe the fish and cages daily.

In regard to the genetics issue, several points can be made. Broodstock for the hatchery are replenished generally once a year by capturing up to 100 juvenile and adult fish. This amount of fish is needed because moi are protandric hermaphrodites, that is, they start off life as a male and at a certain size become a female capable of egg production. Thus, in order to have a sufficient ratio of males to females for reproduction, up to 100 fish are required to be kept in the hatchery.

Broodstock moi to produce fingerlings for stocking are sourced by HF from various locations around the main Hawaiian Islands. It is known that moi around the Islands are genetically the same and represent one population. Therefore, fingerlings produced from these fish would be genetically the same as wild fish. Any escape would function as a stock enhancement event similar to that regularly carried out by DLNR.

Invasive and Protected Species Attachment

The State and the public are very concerned about aquatic invasive species (animals and plants) becoming established in Hawaii and displacing native species. Regarding the HF sea cage farm, the concern has been expressed that the cages and the mooring system provide a potential substrate (albeit, a comparatively small area in comparison to the coastal ecosystem and all its uses) for attachment of invasive algae. The two mile distance from shore and water depth of 140 ft. will act as major deterrents to attached invasive species becoming significant. Moreover, the regular cleaning of cages will strongly reduce the likelihood of invasive species establishing a population at the farm.

There is a positive side to the sea cages providing a substrate for attachment of marine life and that is there have been instances of attachment of regulated and protected species, i.e., the native pearl oyster (*Pinctada margaritifera*) and various coral species. In these few instances, HF has cooperated with DAR, DLNR in discussions to utilize the species for enhancement of wild locations. These cooperative efforts in ocean resource stewardship will continue with the expanded farm.

Sharks

There is a public concern that open ocean aquaculture farms will attract increased numbers of sharks to public recreation areas and in particular increase populations of pelagic sharks, e.g.,

the Tiger Shark (*Galeocerda cuvier*). The HF experience indicates certain species of shark, e.g., Sand Bar Sharks (*Carcharhinus plumbeus*), do commonly become part of the cage ecosystem. Experience also shows that the numbers of sharks vary greatly over the year, with no particular pattern of attraction or avoidance. These observations are supported by scientific studies of shark movements conducted in several locations around the islands, including the HF site (K. Holland, pers. comm., 2008).

Sand bar sharks are the most prevalent species observed at the farm by far. The animals are usually seen alone or in groups of up to five, below the cages. Rarely do they come up to the level of the cage and there have been no aggressive incidents with Company divers. Tiger sharks have been observed near the site once over the years, though it is known they occur regularly in the vicinity of the farm with no pattern of attraction or avoidance (K Holland, pers. comm., 2008). HF observations support the conclusion that given the distance from shore and water depth, farming activities have not significantly affected shark behavior or movements in the general vicinity of the farm. Regardless, HF is aware of the issue and mitigates the potential for problems by regularly removing any dead fish from the cages.

6.2.3 Rare, Threatened, and Endangered Species

Public and agency concerns over open ocean aquaculture's potential impacts on rare, threatened and endangered species focus on altering the animals' behavior and habitat, as well as, the potential for harm by entanglement in netting and mooring lines. As previously described, hawksbill turtles and monk seals have not been observed at the site. Spinner dolphins and humpback whales have been rarely seen in the vicinity and their activities are not affected by cage operations. Green sea turtles are likewise rarely observed at the farm site. Farm activities do not significantly affect their movement and feeding and resting activities.

Humpback whales are of particular interest in Hawaii because they are the focus of a joint State/Federally managed national marine sanctuary. The HF site is not in the sanctuary and whales have not been observed at the site. Moreover, a review of the potential for entanglement of whales in the Gulf of Maine and Newfoundland has indicated the greatest threat is from fishing gear. The same author concluded that the chance of entanglement with Sea Station cage is unlikely to very unlikely due its construction (Celikkol, 1999). Ocean Spar also confirms that there have been no marine mammal entanglement issues with any of its 50 sea cages deployed around the world (L. Gace, pers. comm., 2008). Likewise, experience to date with KBWF, whose lease is in the whale sanctuary, indicate whales can pass around and through the submerged sea cages without incident (N. Sims, pers. comm., 2008).

Regardless, HF will adhere to the recommended standard procedures for avoiding marine mammal entanglement by maintaining taut cage mooring lines and netting at all times. Regular inspection by HF divers of netting and lines will make sure the cage system is taut. Further, should any protected species be encountered at the farm, the appropriate Federal and State authorities will be contacted.

6.2.4 Ocean Activities

The State has ongoing concerns for maintaining access to ocean resources by the public, as well as managing commercial interests. Chapter 190 D HRS passed by the Legislature and signed into law in 1999, provides a process for the long-term leasing and exclusive use of State marine waters for commercial aquaculture. Thus far, commercial offshore farming projects have requested partial exclusivity from DLNR to operate and have readily accommodated certain

uses compatible with operations and the public has cooperated with the request. To illustrate, both HF and Kona Blue currently operate submerged cages and boats transit the lease site either moving to another location or trolling in the area. However, anchoring of boats in the lease site has been discouraged by the lessee's due to the potential for entanglement with the mooring system and disruption of farm operations, as well as safety concerns for staff, divers and fishers.

In proposing to expand its commercial aquaculture activities and lease, HF is requesting several changes in the permit and lease language that affect the degree of public access. The Company is requesting to permanently anchor a feed/security barge more or less in the center of the expanded site (Fig. 6). In addition, HF is requesting that the 61 acre lease area be formally declared a "no anchor" and "no snorkel or SCUBA diving" area.

Allowing this increased control of public access to the leased area will not significantly affect the boating public from moving over the site, as cage operations will continue to be submerged 30 to 40 ft. below the surface. Fishing and diving in the vicinity of the farm have been minor activities and will not be greatly affected by the request for no anchoring and diving in the lease area. Troll and drift fishing in the lease area will continue. Requesting these limited restrictions on this relatively small amount of ocean is essential to: maintaining a safe work environment and keeping the boating public safe, allowing efficient farming operations and managing the substantial insurance liability associated with the project. Appropriate Coast Guard approved lighting and DLNR approved signage will be utilized to alert the public of these limitations.

6.2.5 Noise and Air Quality

Noise and air quality are insignificant issues with respect to the HF farm expansion. Fish farming activities (e.g., work boat engines and air compressors) will not significantly add to the ambient noise levels two miles offshore of a major international airport. Air emissions from the boats and feed/security barge will be insignificant in comparison to that emitted by coastal developments.

6.2.6 Aesthetics

Viewscape, particularly when it involves an ocean view, is very important to coastal property owners, as well as all manner of ocean users. The visual profile of the HF project will change in that a larger permanent feed/security barge (70 ft long, 24 ft. wide and 6 ft. above the ocean surface) will be moored in the center of the site. Otherwise, farm activities will appear as they have for the past seven years without complaint, that is, cages will be operated at depth and rarely be at the surface for maintenance. Further, one or two work boats will be on site daily and will be indistinguishable at a distance from normal boat traffic. These activities will be barely visible, if at all, from the Ewa Beach shore and should have no significant impacts on ocean aesthetics or viewscape.

6.2.7 Historical and Cultural Resources

Potential degradation of historical and cultural resources by development is a concern of the State and the public. HF is not aware of any historical or cultural resources at the existing or expanded site and there have been no such comments or complaints to date. Regardless, interviews were conducted with a knowledgeable cultural practitioner familiar with the location. The Company has also appeared before the EWA Neighborhood Board on three occasions to brief them on the project and received no negative comments. These actions and Company

experience to date supports the conclusion that there are no known traditional fishing grounds or resources at the project site (Appendix 3).

However, both native Hawaiian and non- Hawaiian commercial and recreational fishers have on occasion taken advantage of the fish aggregating characteristics of the cage system and occasionally harvested important species, such as opelu. HF has cooperated with commercial fishers in these instances and in return fishers have avoided farm operations. In terms of the proposed anchor limitations on access, HF anticipates a continuation of the mutual respect and cooperation with commercial fishers.

6.2.8 Cumulative Impacts

The proposed HF action will not obligate DLNR to consider any additional expansion at the existing site or additional leases at other sites. Requests for additional lease acreage anywhere in the state must be justified and approved according to the permitting and lease process specified by Federal and State law.

Expectations are that the expanded lease acreage will accommodate the expanded production capacity given the physical nature of the site, i.e., the relatively strong and consistent currents, the barren sandy substrate suitable for anchoring and the lack of significant marine life in the area. Moreover, the Company's sustainable management of the farm expansion, including stocking, feeding and harvesting, will be supported by ten years of operating experience and application of the latest technology available. Further, a comprehensive environmental monitoring program will provide the feedback needed to determine any unacceptable changes in water or substrate quality and proactively manage them.

In summary, cumulative impacts on the lease site and on the ocean environment around the lease are expected to be manageable and insignificant.

6.2.9 Irreversible and Irrecoverable Commitment of Resources

The proposed action does not involve an irreversible and irretrievable commitment of marine resources or State finances. A long-term lease on 61 acres of State marine waters is being requested. The lease term of 20 years, while necessarily long for investment recovery, is finite and revocable for cause. Moreover, the lease requires the lessee to post a bond so that in the event of HF bankruptcy, funds will be available for the State to remove structures and return the environment to its former condition. Further, there are no State funds involved in the financing of this expansion.

The open ocean environment off Ewa Beach and around the main Hawaiian Islands has demonstrated an enormous capacity to rapidly assimilate and recycle excess nutrients from fish farming. Consistent, strong currents mix and disperse fish waste products into an ambient, low nutrient ocean environment. Marine organisms attached to the cages, in the water column and in the substrate readily consume particulate wastes. Should the source of these nutrient inputs stop, such as with removal of the fish farm, it has been demonstrated the oceanic conditions in the substrate prior to the project placement will likely return (Lin and Baily-Brock, 2008).

7.0 RELATION TO THE STATE CONSTITUTION AND STATE LAWS, PLANS AND POLICIES

The proposed action to expand commercial open ocean aquaculture in State marine waters is consistent with the State Constitution and State laws, plans and policies related to: economic development and diversification, marine resource conservation and use, sustainable food production, and food security and self sufficiency. Below are excerpts from various documents that support this conclusion.

7.1 STATE CONSTITUTION

Article XI Conservation, Control and Development of Resources

“Section 1. For the benefit of present and future generations, the State and its political subdivisions shall conserve and protect Hawaii’s natural beauty and all natural resources, including land water, air, minerals, and energy sources, and shall promote the development and utilization of these resources in a manner consistent with their conservation and in furtherance of the self-sufficiency of the State ...

Section 6. The State shall have the power to manage and control the marine, seabed, and other resources located within the boundaries of the State, including the archipelagic waters of the State, and reserves to itself all such rights outside state boundaries not specifically limited by federal or international law.

All fisheries in the sea waters of the State not included in any fishpond, artificial enclosure or state- licensed mariculture operation shall be free to the public, subject to vested rights and the right of the State to regulate the same; provided that mariculture operations shall be established under guidelines enacted by the legislature, which shall protect the public’s use and enjoyment of the reefs.”

7.2 STATE PLAN LAW, CHAPTER 226, HRS

“ Section 226-4 State Goals. In order to guarantee, for present and future generations, those elements of choice...

it shall be the goal of the State to achieve:

- (1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawaii’s present and future generations...

Section 226-7 Objectives and policies for the economy—agriculture.

- (a) Planning for the State’s economy with regard to agriculture shall be directed towards achievement of the following objectives:
 - (2) Growth and development of diversified agriculture throughout the State.
 - (3) An agriculture industry that continues to constitute a dynamic and essential component of Hawaii’s strategic, economic and social well-being...
 - (9) Enhance agricultural growth by providing public incentives and encouraging private initiatives...
 - (12) Expand Hawaii’s agricultural base by promoting growth and development of flowers, tropical fruits...food crops, aquaculture, and other potential enterprises.
 - (13) Promote economically competitive activities that increase Hawaii’s agricultural self-

sufficiency.

Section 226-103 Economic priority guidelines. (a) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawaii's people and achieve a stable and diversified economy:

(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises.

(A) Encourage investments which:

- (i) Reflect long term commitments to the State;
- (ii) Rely on economic linkages within the local economy;
- (iii) Diversify the economy;
- (iv) Reinvest in the local economy;
- (v) Are sensitive to community needs and priorities;
- (vi) Demonstrate a commitment to provide management opportunities to Hawaii residents.

(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements...

(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:

(A) An industry that can take advantage of Hawaii's unique location and available physical and human resources.

(B) A clean industry that would have minimal adverse effects on Hawaii's environment.

(C) An industry that is willing to hire and train Hawaii's people to meet the industry's labor needs at all levels of employment...

(d) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:

(1) Identify, conserve and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands...

(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities."

7.3 STATE ENVIRONMENTAL POLICY, CHAPTER 344, HRS.

Section 344-3 Environmental policy. It shall be the policy of the State, through its program, authorities, and resources to:

(1) Conserve the natural resources, so that land, water, mineral, visual, air, and other natural resources are protected by controlling pollution, by preserving or augmenting natural resources, and by safeguarding the State's unique natural environmental characteristics in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony, and fulfill the social, economic and other requirements of the people of Hawaii...

(5) Economic development

(A) Encourage industries in Hawaii which would be in harmony with our environment;

(B) Promote and foster the agricultural industry of the State; and preserve and

conserve productive agricultural lands;...

(D) Encourage all industries including the fishing, aquaculture, oceanography, recreation, and forest products industries to protect the environment;...

(F) Promote and foster the aquaculture industry of the State; and preserve and conserve aquacultural lands.”

7.4 COASTAL ZONE MANAGEMENT, CHAPTER 205 A, HRS...

“Section 205 A-2 Coastal zone management program; objectives and policies.

(a) The objectives and policies in this section shall apply to all parts of this chapter...

(b) Objectives...

(5) Economic uses;

(A) Provide public or private facilities and improvements important to the State’s economy in suitable locations...

(10) Marine Resources;

(A) Promote the protection, use and development of marine and coastal resources to assure their sustainability...

(c) Policies...

(5) Economic uses;

(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(1) Use of presently designated locations is not feasible;...

(ii) Adverse environmental effects are minimized; and

(iii) The development is important to the State’s economy...

(10) Marine resources;

(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;...

(E) Encourage research and development of new , innovative technologies for exploring , using or protecting marine and coastal resources.”

7.5 OCEAN AND SUBMERGED LANDS LEASING LAW, CHAPTER 190 D, HRS.

Section 190 D-2 Findings and purpose.

Article XI of the Constitution of the State of Hawaii relating to...

The legislature finds that the State’s marine waters offer the people of Hawaii sources of energy, minerals, food, and useable space. The legislature further finds that the proper management and development of these ocean resources require defined rights of usage and tenure.”

7.6 HAWAII OCEAN RESOURCES MANAGEMENT PLAN, DECEMBER, 2006.

“Table 2: Perspective 2: Preserving Our Ocean Heritage: A vibrant and healthy ocean environment is the foundation for the quality of life in Hawaii and the well being of its people, now and for generations to come...”

Management Goal and Strategic Actions

Encourage cutting edge and appropriate ocean science and technology with safeguards

for ocean resource protection...

Plan and develop sustainable commercial aquaculture in coastal areas and ocean waters to diversify and expand Hawaii's economy and provide locally produced sources of seafood."

7.7 HAWAII 2050 SUSTAINABILITY PLAN.

" The Five Goals For Hawaii 2050

The Hawaii 2050 goals are integrated philosophies that express the suitable future of Hawaii. They reflect a deeply held sense of where Hawaii should be headed...

Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawaii.

Our natural resources are responsibly and respectfully used, replenished and preserved for future generations."

8.0 AGENCIES, ORGANIZATIONS AND INDIVIDUALS CONSULTED

Agencies, organizations, and individuals consulted during the preparation of this DEA are listed below. Correspondence received is included in Appendix 2.

8.1 Federal Agencies

US Army Corps of Engineers
Regulatory Branch

Western Pacific Regional Management Council

US Department of Commerce, National Oceanic and Atmospheric Administration
(Washington DC)

NOAA- Fisheries

NOAA- Aquaculture Program

NOAA- Marine Fisheries Advisory Committee

US Department of Commerce, NOAA (Pacific Region)

NOAA- Fisheries

US Coast Guard

8.2 State Agencies

Department of Agriculture

Chairperson

Aquaculture Development Program

Agricultural Resource Management Division

Department of Business, Economic Development and Tourism

Coastal Zone Management Program

Department of Land and Natural Resources
Chairperson
Office of Conservation and Coastal Lands
Land Division
Division of Aquatic Resources
Division of Boating and Ocean Recreation

University of Hawaii
Sea Grant College Program
Hawaii Institute of Marine Biology

Department of Transportation
Harbors Division

Department of Health
Office of Environmental Quality Control
Clean Water Branch

8.3 County Agencies

City and County of Honolulu
Department of Planning and Permitting

8.4 Other Organizations and Individuals

Office of Hawaiian Affairs

Ewa Neighborhood Board

Waianae High School
Marine Science Learning Center

The Oceanic Institute

United Fishing Agency

Pacific Ocean Producers

Roy's Restaurants

D.K.'s Restaurants

Tropic Fish Hawaii LLC

Ocean Spar LLC

Mike Buck, Radio Personality

William Aila, Harbor Master, Waianae Boat Harbor, DBOR

Kona Blue Water Farms LLC

Maui Fresh Fish LLC

Hawaii Oceanic Technology, Inc.

Kona Fish Company Inc.

Hilo Fish Company Inc.

Hawaii Farm Bureau Federation

Marine Mammal Center

Hiroshi Restaurant

9.0 PRELIMINARY DETERMINATION AND SIGNIFICANCE CRITERIA

The Significance Criteria listed in Chapter 200, HAR, were reviewed in consideration of the proposed action to expand the HF lease area and production capacity at its site approximately two miles off Ewa Beach, Oahu. A finding of no significant impact (FONSI) is anticipated based on the information presented in this DEA.

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resource.

There will not be an irrevocable commitment to loss or destruction of any natural or cultural resource by this action. Both the existing and expansion site have a barren sand bottom with no natural relief or significant fisheries or other marine resources. Currents in the area mix dissolved and particulate waste products and aid in their rapid assimilation and recycling by the highly dynamic, nutrient poor ocean environment. Any species population changes in the substrate infauna below the cages are not ecologically significant and it has been demonstrated the substrate community will change back to previous ocean conditions when the source of excess nutrients or the project is removed. Further, there are no known cultural resources in the area.

In addition, the long term lease is for a finite period of time. The lease specifies that all improvements must be removed by the lessee upon termination of the lease and a bond is posted to assure compliance with this condition.

2. Curtails the range of beneficial uses of the environment.

Ten years of nearly daily observations of the public's use of the general area where the farm is located indicates very limited public activity and the proposed action will not curtail the range of beneficial uses of the environment. There is little regular recreational or commercial use of the lease area, except for occasional transiting of boats in the vicinity and the occasional opelu fisher. The proposed action is requesting the lease formerly establish a greater limitation in public access, that is, a no anchor and no diving zone for the lease area. The request is prompted by increased concerns over staff and public safety and potential for disruption of expanded farm activities, as well as, company insurance liability. This requested limitation is consistent with the current HF management approaches and the permitted lessee management of State land leases. The restriction will not interfere with boats freely passing through and around the submerged farm and troll and drift fishing at the

site.

3. Conflicts with the State's long-term environmental policies or goals or guidelines as expressed in Chapter 344, HRS.

The proposed action, which sustainably expands commercial aquaculture in State marine waters and increases supplies of high quality seafood for tourists and residents in an environmentally responsible manner, is consistent with State environmental goals, policies, and guidelines as stated in Chapter 344, HRS. To illustrate, Section 344-3 discusses managing the State's unique natural environment for the benefit of residents;" in a manner which will foster and promote the general welfare, create and maintain conditions under which humanity and nature can exist in productive harmony and fulfill the social, economic and other requirements of the people of Hawaii."

Further, Section 344-4 states aquaculture should be promoted by the State; "(F) Promote and foster the aquaculture industry of the State; and preserve and conserve productive aquacultural lands."

4. Substantially affects the economic or social welfare of the community or state.

The proposed action will positively affect the economic or social welfare of the community or state and no negative effects are anticipated. Expanded environmentally sustainable fish farming activities will increase employment opportunities for residents, provide greater amounts of moi for the local market, and stimulate the economy by the Company's expenditures to support industries. The State will benefit from payment of lease rents to DLNR for use of the ocean resources, as well as the increased personal and corporate taxes paid to the State. The proposed action will be financed by a combination of federal loan funds and private investment and not require State funds.

5. Substantially affects public health.

The proposed action will increase the availability of high quality, healthy seafood (moi) for residents and tourists, statewide. The project will be managed to be environmentally sustainable and not have any significant impacts on the quality of state marine waters, as regulated by the DOH.

6. Involves substantial secondary impacts, such as population changes or effects on public utilities.

No significant secondary impacts, such as shifts in population or impacts on public utilities, will be involved in the proposed action. The Company's support facilities at Keehi Lagoon and Kalaeloa are compatible and consistent with current land uses in the area.

7. Involves substantial degradation of water quality.

The proposed action will not involve any substantial degradation of water quality. Regular testing for seven years at the existing commercial project site has shown that ocean currents readily disperse dissolved and particulate waste products and facilitate assimilation and recycling by the ocean environment. The expanded production will be carried out in an expanded lease area and subjected to the same consistent current patterns and ocean mixing of the existing project. Moreover, the project will be subjected to a rigorous water

quality monitoring program to assure State receiving water standards are met.

8. Cumulatively has considerable effect on the environment or involves a commitment for larger actions.

The project is relatively small in comparison to the large and busy open ocean area along the South shore of Oahu. Data from the existing farm suggests that there is no measureable impact on water quality, and no significant impact on the substrate beyond the minor impacts in the immediate cage area. Thus no cumulative impacts on the water column are anticipated with the expanded farm and any unacceptable impacts on the substrate beneath the cages can be managed by HF. Implementation of the proposed action does not involve any commitment to a larger action at the site.

9. Substantially affects a rare, threatened or endangered species or its habitat.

There are no substantial effects anticipated on any rare, threatened or endangered species by the expanded project. Most species of concern, except for green sea turtles, have not been seen at the site. Observations indicate that green sea turtles and their habitat are unaffected by the farming activities. Moreover, the sea cages will maintain taut netting and mooring lines at all times to deter any potential issues with protected aquatic species.

10. Detrimentially affects air or water quality or ambient noise levels.

The project has no significant air borne emissions beyond those of standard boat engines that service the farm. Any noise generated by farm operations will come from logistics and support vessels and will be insignificant compared with noise generated by airplanes in the adjacent approach zone to Honolulu International Airport. As discussed above there will be no detrimental effects on water quality by the proposed action due to the environmental setting and current farm management practices.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area.

The project's ocean location is not an environmentally sensitive area and is reflective of open-ocean and sand bottom communities around the state. The nearest coral reef is shoreward to the North Northwest approximately 1800 ft, away. As indicated, the proposed expansion is seaward of this location. Moreover, water quality studies of the impacts of the existing HF project on this habitat have shown no impact and none are anticipated with the expansion.

12. Substantially affects scenic view planes or vistas.

The HF site is a significant distance from shore (nearly two miles) off Ewa Beach, Oahu. Moreover, the sea cages will be operated submerged with only occasional appearances at the surface for maintenance. A permanently moored feed/security barge is being requested for the site. The low profile barge, as well as the work boats will appear as normal vessel traffic from the ocean and should be barely visible if at all, from shore.

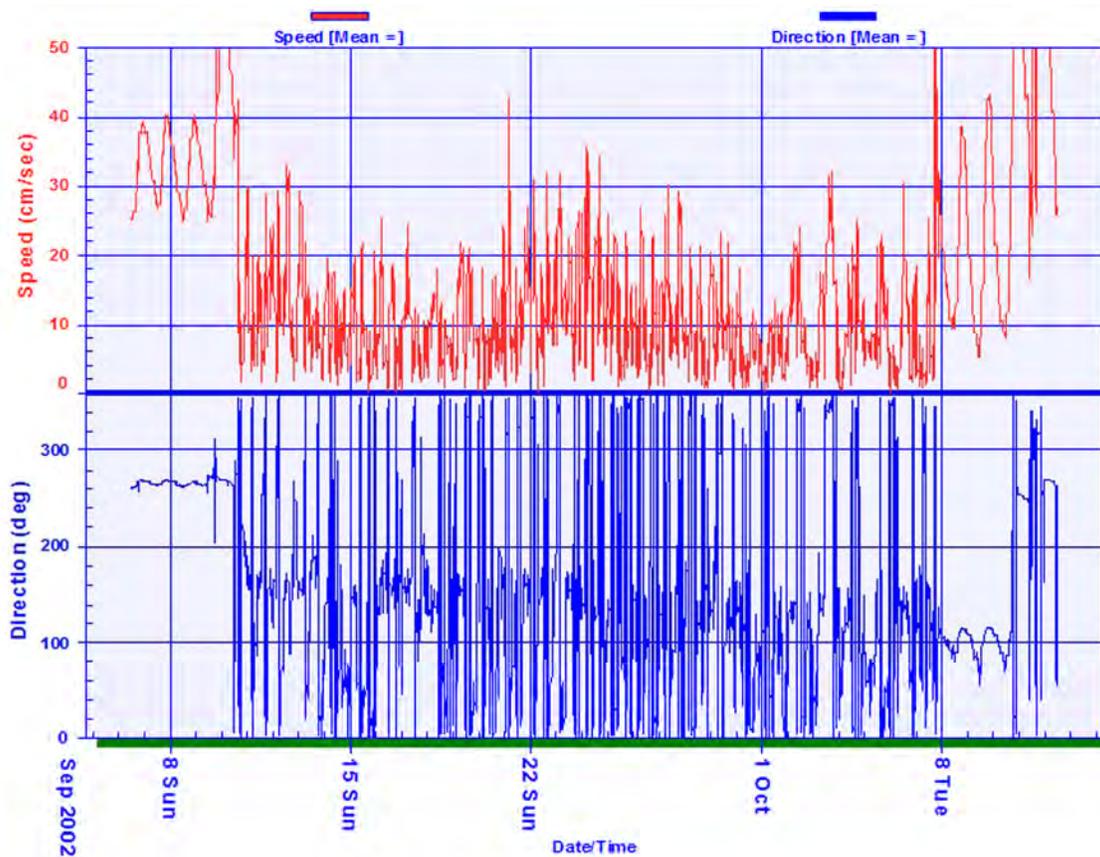
13. Requires substantial energy consumption.

There will be an insignificant increase in energy required by vessels providing logistics and maintenance support to the expanded site.

10.0 REFERENCES

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APPENDIX I: CURRENT DATA



Appendix 1. Current meter test data for HF site, September 8, 2002 to October 8, 2002.

APPENDIX 2: PRECONSULTATION CORRESPONDENCE

- Leslie Canisbog
- Jay Gyotoku
- Waianae High School
- Marine Mammal Center
- Roy's Restaurant
- Hiroshi Restaurant
- United Fishing Agency
- Tropic Fish Hawaii LLC
- Kona Fish Company Inc.
- Hilo Fish Company Inc.
- Oceanic Institute
- Hawaii Farm Bureau
- Pacific Ocean Producers

Leslie Cansibog
87149 Milikami St.
Waianae, HI 96792

July 28, 2008

Randy Cates
Hukilau Foods
P.O. Box 335
Kailua, HI 96734

Dear Randy,

Thank you for asking me to review your expansion plans for your fish farm. I have read through your proposal and have no concerns to the ocean environment or our fishery, in fact, it will once again enhance it. As you know I am a Commercial fisherman who over the past few years has taken advantage of the Opelu fishery that your site has enhanced, I have received a great benefit due to the site and location.

I find it interesting how both You and I have evolved from our earlier days of commercial fishing, we both have had to make changes in the way we catch and produce our product, You went into Aquaculture, and I changed my type of fishing from primarily trolling to now Opelu fishing. The ever changing fishery and economics of commercial fishing have forced this change in many ways, fuel is now the biggest driver of this change. Though there were many skeptics regarding your fish cage operation initially, we have all seen the benefits and your operations have only benefited many commercial fishermen.

Your crew and I over the years have enjoyed a great mutual respect and working partnership, I am thankful to be an additional eyes and ears for you when your crew is not present at the site, in return I have a good resource to fish for and near to shore.

I fully support your expansion and look forward to any other sites if you choose to do so, we will need this type of operation in the future as long as they are able to work with the existing fisherman as you have done so. Hopefully others will take note and learn how to be respectful to other fisherman and the Community.

Sincerely,



Leslie Cansibog
Captain

Jay Gyotoku
1620 Waialele St.
Honolulu, HI 96819

July 28, 2008

Randy Cates
Hukilau Foods
P.O. Box 335
Kailua, HI 96734

Dear Randy,

Thank you for having me review your expansion plans, as you know, over the years I have benefited from your operation with regards to my opelu fishery, with the expansion proposal, I see only an increased benefit. The mutual respect and working relationship that I have with your company and crew is a win, win situation, over the years I have seen no negative impact, only positive impact with regards to both the fishery and other ocean users. I have been a commercial fisherman for most of my life, and your operation has only benefited me personally.

As times have dramatically changed with my fishery, it has been a great benefit to have an opportunity to fish around your site, with rising fuel costs, it is important to have the ability to stay closer to our shoreline and maintain my lively hood.

I wish you all of the success, and look forward to maintaining our working relationship in the future.

Sincerely, 

Jay Gyotoku



MARINE SCIENCE LEARNING CENTER

Wai'anae High School 85-251 Farrington Hwy Wai'anae 96792
Phone: 696-7017 Fax: 697-7018

June 11, 2008

To Whom It May Concern:

My name is Dana Hoppe and I am the coordinator of the Marine Science Learning Center at Waianae High School. I teach a four course sequence to juniors and seniors that constitutes the marine science major within the Natural Resources Academy at Wai'anae High School. I have been a teacher at Wai'anae High School for the past 20 years and coordinator of the Learning Center for the past 8 years.

Wai'anae High School's marine science major is designed to expand and enrich learning experiences of students in the field of marine science and aquaculture science through a variety of "hands-on" activities. The program provides students with knowledge and skills about aquaculture; and, a restructuring of their attitudes about the use, protection and appreciation of the ocean environment and its resources. The Marine Science Learning Center has a functioning saltwater aquaculture facility where students learn to raise a variety of marine species. A primary focus of our program is saltwater aquaculture and its role in the sustainability of our marine resources.

Randy Cates of Hukilau Foods (HF) has made important contributions to the success of the Marine Science Learning at Wai'anae High School. This school year he provided 1000 *moi* fingerlings to the Learning Center and has offered more fingerlings to the program for the coming school year. He has provided technical support and advice that has improved the function of Wai'anae High School's facility. He has also offered to open HF's hatchery facilities, when they have been completed, for student field trips. It is our hope that with the skills learned in the Learning Center program our students will be able to participate in internships and provide the future workforce for HF's hatchery and cage culture facilities.

We strongly support Hukilau Foods's proposed expansion of their existing offshore cage culture. It is critical with the diminishing fisheries in the World's Oceans that we explore all possible options that will reduce the demands upon wild ocean resources. I believe that offshore cage culture will play an important role in helping us meet the demands for seafood. I strongly support HF's programs and activities.

Yours Sincerely,

Dana H. Hoppe, Coordinator
Marine Science Learning Center
Wai'anae High School

June 11, 2008



To Whom It May Concern;

I fully support the mission of Hukilau Foods to bring more sustainable fish and seafood to the tables of Hawaii and eventually to the rest of the world. The success that Randy Cates has had with farming Moi offshore, and developing an industry in Hawaii that both employs Hawaii residents and showcases Hawaii to Chefs and consumers nationally, is remarkable. Responsible farming of fish not only brings more product to the market, it takes the pressure off of the fragile ecosystem of the ocean that surrounds us. By farming larger quantities through aquaculture it allows the wild fish populations to regroup, and strengthen in number because of the lessened demand for wild caught fish. It is truly a win-win situation.

The opportunity to be on the cutting edge of something so important to the people of Hawaii for not only this generation, but for generations to come presents itself in Hukilau Foods proposal. I urge you to strongly support their proposal.

Yours truly,



Roy Yamaguchi
Chef/Founder
Roy's Restaurants

Roy's Restaurant

6600 Kalaniana'ole Hwy.
Honolulu, Hawaii 96825

Tel: (808) 396-ROY'S (7697)
FAX: (808) 396-8706

h i r e s h i

June 11, 2008

Re: Expansion of offshore Moi farm, Ewa Beach, Oahu

Dear Randy,

I am very glad to hear of your plans to seek an expansion of your lease area and increase production with your moi farm. Your product has been very important to our business; many of our customers often request moi in our restaurant. As you know, we have utilized your product from the very first harvest, and we fully support your business success.

Many people do not realize how important it is to have fresh products produced from Hawaii. Our customer base is a mix of both local residents and tourists. It is vital that we have products from Hawaii available to our customers. Over the years I have seen the demand for your product increase, and with the recent closure of the bottom fish fishery, many of us in the restaurant trade rely on your product to help fill the missing gap in fish supply, especially a fish that can be served whole.

I am very thankful to you and your crew for taking me and my staff out on several visits to see first hand how you produce your fish. It was amazing to see how small of a footprint the area is once you are out in the open ocean, it truly put everything into perspective. This experience truly educated my staff as to what the possibilities are in being able to have sustainable fish from Hawaii.

Often we are asked to support many charitable events in Honolulu, and Moi is often one of the products that we all rely on. Your donations of product goes a long way for our community.

I look forward to supporting you in anyway possible.

Thank you

Hawaii

UNITED FISHING AGENCY, LTD.

1131 N. Nimitz Highway

Honolulu, HI 96817

TEL: (808) 536-2148 • FAX: (808) 526-0137

August 2, 2008

John R. Cates
Cates International, Inc.
P. O. Box 335
Kailua, HI 96734

Dear Randy,

We support your intent to expand your aquaculture operations and production, especially considering the plight of our nearshore/reef ecosystems and the significance of your moi to our Hawaii Regional Cuisine chefs and restaurants.

The quality, consistency, and availability of your finfish product means a lot to our seafood programs and the growing image of Hawaii and its ocean products.

Congratulations and best wishes for your continued success.

Sincerely,



Brooks H. Takenaka
Assistant General Manager



1020 Auahi St. Honolulu, HI 96814 Fax (808) 591-2934 Phone (808) 591-2936

July 28, 2008

Tropic Fish Hawaii, LLC. Fully endorses and supports Hukilau Foods in their expansion plans. The local seafood markets and our visitor industry sorely need more local marine fish that are grown in an environmentally sustainable manner. There is a growing shortage of seafood from the wild and aquaculture has become a major source of supply for our company.

Currently we sell moi, ogo, salmon, oysters, clams, kampachi, hamachi, abalone, basa, tilapia, and shrimp that are grown on aquaculture farms. Hukilau's proactive vision to expand their operations is very welcome news to the Hawaiian consumers who can not find local reef fish any more. Our restaurants and hotels will also benefit by having a reliable supply of the freshest home grown Hawaiian fish available year round. As an island state in the Pacific Ocean we are obligated to be able to provide fresh island seafood to our visitors and locals alike. And with the state of the art hatchery that Hukilau is building, we are very excited about the different varieties of Hawaiian fish that will be available in the very near future.

Sincerely,

A handwritten signature in cursive script that reads "Glenn Tanoue".

Glenn Tanoue
Marketing Director
808-478-3205



73-4776 Kanalani Street ~ Kailua-Kona, Hawaii 96740
Phone (808) 326-7708 ~ Fax (808) 329-3669

June 30, 2008

Aquaculture offers sustainability for our food supply and a means to avert depletion of our ocean resources. In the last half decade, those in the seafood business realize that the ocean is not limitless in its sea life and that there are bounds to how much can be fished before supply is depleted and the ocean ecosystem collapses. Protecting the long-term health and supply of Hawaii's fishery is for that, imperative to us. It is our livelihood that is on the line.

Hukilau Foods LLC., formally Cates International Inc., leads as the first successful business to ocean farm in the entire United States. Two miles off the Leeward coast of Oahu, the company commercially farms the Hawaiian moi ('*Polydactylus sexfilis*') in modern open ocean cages. The ocean cages that moi are raised in approximates the conditions that the ancient Hawaiians created with fishponds in years long-ago along the Hawaiian Islands coastline. Currently, Hukilau Foods has four cages immersed in 150 feet of water and lie about 40 feet under the ocean surface to produce 900,000 pounds of moi a year. This nears maximum capacity of 1.2 million pounds annually for its existing facility; of which, Hukilau Foods is capable of selling beyond if it were granted permission to expand operations.

Hukilau Foods is requesting from the state Department of Land and Natural Resources (DLNR) to lease an additional 33 ocean acres for the accommodation of four additional cages in its continued production of moi. The company anticipates that the added cages will provide the potential to produce 5 million pounds of fish a year, enough supply to make moi available to everyone in Hawaii and markets beyond Hawaii. Furthermore, the demand fulfillment that could be achieved in the marketplace by a production rise will assist to alleviate market demand for over fished Hawaiian fish species in being an affordable eco-friendly alternative, and thereby enable depleted fish stocks a chance to recover.

Kona Fish Company, Inc. endorses and supports Hukilau Foods, Inc., in their expansion efforts. The technology that Hukilau Foods has pioneered to farm moi is one that is adaptable to other ocean species as well. Off the shores of Kailua-Kona, for instance, Kampachi is being successfully raised in similar systems derived from the farming of moi. With further development and expansion of fish farming in Hawaii, the technology will yield sustainability to Hawaii's food supply. This is the future. And, it is one that Hawaii can play a vital role in the way seafood is harvested and ocean resources conserved.

Sincerely,

Kerry Umamoto
President of Kona Fish Company, Inc.



55 Holomua Street ~ Hilo Hawaii 96720
Phone (808) 961-0877 ~ Fax (808) 934-8783 / (808) 935-1603

June 30, 2008

Aquaculture offers sustainability for our food supply and a means to avert depletion of our ocean resources. In the last half decade, those in the seafood business realize that the ocean is not limitless in its sea life and that there are bounds to how much can be fished before supply is depleted and the ocean ecosystem collapses. Protecting the long-term health and supply of Hawaii's fishery is for that, imperative to us. It is our livelihood that is on the line.

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Hilo Fish Company, Inc. endorses and supports Hukilau Foods, Inc., in their expansion efforts. The technology that Hukilau Foods has pioneered to farm moi is one that is adaptable to other ocean species as well. Off the shores of Kailua-Kona, for instance, Kampachi is being successfully raised in similar systems derived from the farming of moi. With further development and expansion of fish farming in Hawaii, the technology will yield sustainability to Hawaii's food supply. This is the future. And, it is one that Hawaii can play a vital role in the way seafood is harvested and ocean resources conserved.

Sincerely,

Charles M. Umamoto
President of Hilo Fish Company, Inc.



June 20, 2008

John R. Cates
CEO
Hukilau Foods
P.O. Box 335
Kailua, Hawaii 96734

Dear Mr. Cates:

Subject: Environmental Assessment

The Oceanic Institute (OI), an affiliate of Hawaii Pacific University, has enjoyed working closely with you (dba Hukilau Foods) for many years. We appreciate your efforts and success in commercializing technologies for off-shore aquaculture that were developed collaboratively by you, Oceanic Institute, and the University of Hawaii. Hukilau Foods now operates what was the first commercial offshore aquaculture facility in the nation. Today, Hawaii is seen as a model for offshore aquaculture development. This is in no small part because of your success. Without your dedication and commitment to developing your facility in a sustainable manner while addressing public concerns, this would not have been possible.

One major contributing factor to your success has been your willingness and commitment to fully engage affected communities. The extensive public meetings you had with residents along the Leeward Coast of Oahu and your openness to hearing their concerns and addressing them was, in my opinion, critical to the success of your project. I know you have also reached out to the commercial fishing sector, WESTPAC, seafood distributors, restaurants, Waianae High School, McKinley High School, Heeia Fishpond and many other stakeholders to be sure that your business does not have any negative impact on them or the community at large. In fact, your practice of preferentially hiring people from the Leeward Oahu has had a positive impact on that community. This trust is reflected in the EA that you are submitting.

Technically, you have done things right, too. The development of sustainable hatchery and offshore cage culture technologies are critical to the successful, long-term operation of any facility. In addition, extensive monitoring conducted around your site has demonstrated that activities associated with offshore cage culture (e.g., feeding, etc.) do not cause significant adverse environmental impacts. Wild, native fish have been used as broodstock. Thus, if fish somehow escape from the cage, the only consequence is positive. This was demonstrated through research on stock enhancement we did at OI for over a decade. Uncertainties have been resolved in favor of assuring that your cages and other offshore facilities do not have adverse environmental impacts or compromise public use of the areas you are leasing.

Finally, I want to take this opportunity to commend you for your leadership in promoting sustainable aquaculture nationwide and recognizing the importance of the fishing industry and the aquaculture industry working together to meet the growing demand for seafood throughout the world in a sustainable manner. Your commitment to this is, perhaps, best recognized through your membership in MAFAC, which manages our Nation's fisheries. As a member of the Hawaii Aquaculture Association, I know you have stood up numerous times in defense of wild fisheries when it is evident that best management practices have been used.

I also want to acknowledge your willingness to support Hawaiian fishpond restoration and enhancement activities. To date, you have given away over 130,000 fingerlings to restock Hawaiian fishponds with moi, a fish that has traditionally been grown in fishponds but is so rare now that natural recruitment is practically impossible. This has been done with the knowledge that some of these fish will end up on the market competing with fish you are raising in offshore cages. This, too, is appreciated by the Hawaiian community and others interested in fishpond restoration.

In short, I am proud that Oceanic Institute is a partner in your efforts to develop offshore aquaculture in a sustainable manner. We look forward to working with you in the future.

Sincerely,



Bruce S. Anderson, Ph.D.
President



Hawaii Farm Bureau
F E D E R A T I O N

2343 Rose Street, Honolulu, HI 96819
PH: (808)848-2074; Fax: (808) 848-1921

Randy Cates
Hukilau Foods
P.O. Box 335
Kailua, Hawaii 9634

Dear Mr. Cates:

My name is Dean Okimoto, President of the Hawaii Farm Bureau Federation, which is the largest non-profit general agriculture organization representing approximately 1,600 farm and ranch family members statewide.

The Hawaii Farm Bureau Federation (HFBF) is writing in support Hukilau Foods' proposed expansion of their existing offshore lease for cage culture of moi. Hukilau Foods current operation plays a critical role in Hawaii's aquaculture industry. Aquaculture is a growing sector of Hawaii's agricultural industry that is important not only for the viability of the State's agricultural industry, but for the viability of the State's overall economy.

HFBF feels that Hukilau Foods' expansion project holds great potential and offers opportunities for Hawaii's thriving aquaculture industry. Their expansion and increased production would contribute to Hawaii's efforts towards sustainability.

HFBF strongly supports Hukilau Foods' expansion and their application for the required permits and Environmental Assessment.

Sincerely

A handwritten signature in black ink, appearing to read "Dean Okimoto".

Dean Okimoto
President
Hawaii Farm Bureau Federation

June 16, 2008

Randy Cates
Hukilau Foods, LLC
P.O. Box 662069
3-1850 Kaunualii Hwy
Lihue, HI 96766

Aloha Randy:

Thank you for inviting comment on Hukilau's proposed expansion. I am impressed, looking back over 25 years building POP from nothing to what it is today. I have a deep appreciation for what you have done and your future plans.

All of us in today's seafood environment face interesting challenges, and I very much believe as you do our industries should be working together. Our interest is best served by focusing on quality expansion that gives Hawaii solid environmental proposals and focuses on local product produced by local people. So from my perspective, Hukilau is on point. This is a quality project that comes with a giant advantage to our state in that your proposal is well tested and your stewardship is fact.

I did note your request that access be somewhat restricted over the previous lease. In the scope of things this is a very small property and you are not limiting transit. I do believe the public will understand regarding their snorkeling and diving restrictions as they are in the interest of public safety.

The demand for seafood continues to increase on a global scale and I am aware of the marketing opportunities out of state. Your commitment to the local market is very important. I think keeping island tradition alive is what makes Hawaii special and in the long run will pay off.

Best of luck to you and always know that we are available to work with you in any way possible

Aloha,

Jim Cook
Pacific Ocean Producers

APPENDIX 3: PUBLIC COMMENTS AND RESPONSES

A. Introduction

This Appendix has been organized in sections. Section B. contains project support emails received from the U.S. Mainland and Hawaii, along with HF responses. Section C. contains emails and letters from Federal, State and County agencies, along with HF responses.

Section D requires a more extensive explanation of the presentation. A non-profit, consumer advocacy organization based in Washington D.C., the Food and Water Watch (FWW), has targeted Hawaii's offshore aquaculture industry, as part of a national anti-offshore aquaculture campaign. FWW uses Internet Activism techniques to attempt to influence public opinion and government permit processes/decisions. The group's website disperses FWW opinions on issues and selected background information and offers visitors a form letter to send in via the Internet.

In the case of the Hukilau Food LLC (HF) permit process, FWW listed a link to the HF DEA and provided a form email letter for visitors to sign. HF received 84 identical emails from around the country and around Hawaii. Since all these emails were the same, HF is providing one form letter response to the general concerns raised and a list of recipients to satisfy the requirement to disclose all comments received.

Section E contains other individual comments on the HF DEA, along with HF responses. These include detailed comment letters from FWW and the Big Island group, the Kanaka Council.

B. Supportive Public Email Letters and Responses

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/20/2009 9:16:54 A.M. Hawaiian Standard Time
From: bbradford@jcb radford.net
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I'd like to express my SUPPORT for the expansion of Hukilau Foods offshore fish farm.

Do the the continuing depletion of worldwide fish stocks, it is imperative that entrepreneurs develop new, sustainable techniques for farming fish. My research suggests that Hukilau Foods is an ecologically sensitive, responsible fish farming company that is part of a growing movement to reform the way fish are farmed. Letting the company expand will not only improve the economy of Hawaii, but it will also further the development of sustainable aquaculture.

Sincerely,

Bryan Bradford
1814 Travis Heights Blvd
Austin, TX 78704

Saturday, June 20, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Bryan Bradford
1814 Travis Heights Blvd.
Austin, Texas 78704

Dear Mr. Bradford:

Thank you for your review of Hukilau Foods (HF) Draft Environmental Assessment. You indicate you support the project expansion because due to the continuing depletion of worldwide fish stocks, new sustainable farming techniques are needed. Further, HF is an ecologically sensitive, responsible fish farming company that is part of a movement to reform how fish are farmed in a sustainable approach, while improving Hawaii's economy.

We certainly agree with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 8:06:57 A.M. Hawaiian Standard Time
From: cgoudey@mit.edu
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I would like to express my whole-hearted support for the planned expansion of Hukilau Foods offshore fish farm in Mamala Bay. Since its establishment, and like other responsibly-managed offshore fish farms, Hukilau Foods has demonstrated the sustainable nature of such operations. The carefully planned expansion of their production over a three year period will ensure that it stays sustainable while providing additional economic opportunities for Hawaiians.

Hukilau's Draft Environmental Assessment addresses well the effects of the proposed farm. The benign nature of properly sited offshore fish farms is in contrast to outdated, near-shore methods. As such, these operations become important stakeholders for clean, healthy oceans and it is important to encourage their growth.

Much of the opposition heard about offshore aquaculture is based on the extrapolation of impacts from near-shore operations using outdated technology and 20-year-old practices. Don't let the growth of this important and sustainable industry be held hostage to the misinformation knowingly being dispensed by a small group of anti-aquaculture advocates. The facts learned over the last ten years regarding offshore aquaculture are indisputable and the potential for sustainable economic growth is at hand.

Hukilau foods is asking the citizens of Hawaii to allow it to expand its production in a way that will increase the value of the public's oceans. Hawaii is poised to capture the economic benefits of offshore aquaculture and it is important not to throw up unnecessary hurdles that could discourage responsible expansion.

Sincerely,

Clifford A. Goudey
21 Marlboro Street
Newburyport, MA 01950

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Dr. Clifford A. Goudey
21 Marlboro Street
Newburyport, Massachusetts 01950

Dear Dr. Goudey:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment. You express your whole-hearted support for the planned expansion of HF's offshore fish farm. You note HF has demonstrated the sustainable future of offshore fish farming to date and the phased production will help maintain this sustainable approach.

You indicate the DEA adequately addresses the effects of the proposed farm and the benign nature of such operations. Further, it's important to encourage the growth of such operations to benefit the Hawaii economy and its citizens. You correctly indicate that much of the opposition to offshore aquaculture is based on the extrapolation of impacts of nearshore operations in lower circulation environments.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 10:32:40 A.M. Hawaiian Standard Time
From: tjffarms@aol.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am expressing significant support for the expansion of Hukilau Foods offshore fish farm in Mamala Bay.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period, dramatically benefiting the economy of Hawaii, creating jobs and cementing a foundation for future growth.

The current DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to improve the state's economy by intensifying production in a way that will increase the value of public resources.

Sincerely,
Tom Frese

Tom Frese
441 Cadagua
Coral Gables, FL 33146

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Tom Frese
441 Cadagua
Coral Gables, Florida 33146

Dear Mr. Frese:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). You express your significant support for the project.

You indicate the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, economic impacts on Hawaii and U.S. markets. Moreover, you suggest the project will increase the value of public resources.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/20/2009 8:14:23 A.M. Hawaiian Standard Time
From: andy@oberonfmr.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am expressing significant support for the expansion of Hukilau Foods offshore fish farm in Mamala Bay.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period, dramatically benefiting the economy of Hawaii, creating jobs and cementing a foundation for future growth.

The current DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to improve the state's economy by intensifying production in a way that will increase the value of public resources.

Sincerely,
Andy J. Logan

Andy Logan
1630 Miner St POB 675
Idaho Springs, , CO 80452

Saturday, June 20, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Andy Logan
1630 Miner St.
P.O. Box 675
Idaho Springs, Colorado 80452

Dear Mr. Logan:

Thank you for reviewing Hukilau Foods Draft Environmental Assessment (DEA). We appreciate your comments that the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported. Further, you indicate the proposed project will improve the Hawaii economy and increase the value of public resources.

We certainly agree with your conclusions and thank you for your strong support of the project. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 7:32:26 A.M. Hawaiian Standard Time
From: spage@oceanfarmtech.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am writing to express my support for your planned fish farm expansion. I have been active in fish farming for over ten years as an Environmental Compliance Officer, a General Manager of a fish farm, and as an equipment supplier to aquaculture. I have visited your site in Mamala Bay, and consider it to be an ideal site from a biological and environmental standpoint. I have followed the progress of your environmental monitoring over the years with interest, and your record speaks for itself.

The future of seafood production is in the balance today, and only through the efforts of competent people like yourself will the potential of ocean farming be realized. Your application for expansion is building upon an existing and proven cultural, environmental and fiscal track record for success in ocean farming that is unsurpassed anywhere in the world.

Sincerely,

Steve Page
114 Higgins Rd. N.
Searsmont, ME 04973

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Steve Page
114 Higgins Rd. N.
Searsmont, Maine 04973

Dear Mr. Page:

Thank you for your expert review of Hukilau Foods LLC (HF) Draft Environmental Assessment. You indicate you are very experienced in fish farming, having worked many years as an Environmental Compliance Officer, General Manager and aquaculture equipment supplier. Further, you know the Mamala Bay site and the project very well and consider it an ideal site from a biological and environmental standpoint.

HF certainly agrees with your conclusions and positive comments. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 10:05:08 A.M. Hawaiian Standard Time
From: sterry19@gmail.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am expressing significant support for the expansion of Hukilau Foods offshore fish farm in Mamala Bay.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period, dramatically benefiting the economy of Hawaii, creating jobs and cementing a foundation for future growth.

The current DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to improve the state's economy by intensifying production in a way that will increase the value of public resources.

Sincerely,

Seth Terry

Seth Terry
4285 South Bellaire Circle
Englewood, CO 80113

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Seth Terry
4285 South Bellaire Circle
Englewood, Colorado 80113

Dear Mr. Terry:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). You express your significant support for the project.

You indicate the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, economic impacts on Hawaii and U.S. markets. Moreover, you suggest the project will increase the value of public resources.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 5:19:34 A.M. Hawaiian Standard Time
From: david@aquacopia.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am expressing significant support for the expansion of Hukilau Foods offshore fish farm in Mamala Bay.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period, dramatically benefiting the economy of Hawaii, creating jobs and creating a foundation for future growth.

The current DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to improve the state's economy by intensifying production in a way that will increase the value of public resources.

Sincerely,

David Tze
28 W 27th Street 2nd Floor
New York, NY 10001

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. David Tze
28 W. 27th Street, 2nd Floor
New York, New York 10001

Dear Mr. Tze:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). You express your significant support for the project.

You indicate the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, economic impacts on Hawaii and U.S. markets. Moreover, you suggest the project will increase the value of public resources.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 8:37:15 A.M. Hawaiian Standard Time
From: lviera@gmu.edu
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I would like to express full support for the expansion of Hukilau Foods offshore fish farm in Mamala Bay.

The expansion of Hukilau foods would quadruple the production of cultured Moi - from 1.2 million pounds to 5 million pounds over a three year period, dramatically benefiting the economy of Hawaii, reducing the need for wild capture, creating jobs and cementing a foundation for future growth.

After reading the current DEA, I believe it sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to contribute to the state's economy by intensifying production in a way that will increase the value of public resources and reduce dependence on wild capture of seafood.

Best of luck in your endeavour.

Sincerely,

Luis Viera
1415 North Taft Street
Arlington, VA 22201

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Luis Viera
1415 North Taft Street
Arlington, Virginia 22201

Dear Mr. Viera:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). You express your significant support for the project.

You indicate the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, economic impacts on Hawaii and U.S. markets. Moreover, you suggest the project will increase the value of public resources.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 2:36:13 P.M. Hawaiian Standard Time
From: jim.wyban@gmail.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I strongly support expansion of Hukilau Foods offshore fish farm in Leeward Oahu.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period, will dramatically benefit the economy of Hawaii, creating jobs and cementing a foundation for future growth.

The current DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to improve the state's economy by intensifying production in a way that will increase the value of public resources. Fish farming in Hawaii increases food security and is consistent with traditional practices. I strongly support this project.

Sincerely,

Jim Wyban PhD
High Health Aquaculture Inc.
Kona Hawaii

Jim Wyban
73-4460 Qn K Hwy #117
Kailua Kona, HI 96740

Handwritten note:
All Copy sent to JSCorbin

Friday, June 19, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Dr. Jim Wyban
High Health Aquaculture
73-4460 Queen Kaahumanu Highway, #117
Kailua-Kona, Hawaii 96740

Dear Dr. Wyban:

Thank you for reviewing Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). You express your significant support for the project.

You indicate the DEA sufficiently addresses the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; and, economic impacts on Hawaii and U.S. markets. Moreover, you suggest the project will increase the value of public resources.

HF certainly agrees with your conclusions. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

C. Federal, State and County Agency Emails and Letters and Responses



U.S. DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Blvd., Suite 1110
Honolulu, Hawaii 96814-4700
(808) 944-2200 • Fax: (808) 973-2941

June 22, 2009

Randy Cates
Hukilau Foods LLC
P.O. Box 335
Kailua, HI 96744

Dear Mr. Cates:

This letter provides comments on the Draft Environmental Assessment (DEA) of the Proposed Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawaii. The following comments incorporate concerns of both the Protected Resources and Habitat Conservation Divisions of the NOAA Fisheries Pacific Islands Regional Office (PIRO).

The proposed aquaculture operations discharge site is located in a coastal area that has been identified as Essential Fish Habitat (EFH) under the following Western Pacific Regional Fishery Management Council Fishery Management Plans (FMPs): Pelagics (eggs and larvae), Bottomfish (eggs and larvae), Crustaceans (eggs, larvae, juveniles, and adults), and Coral Reef Ecosystem (eggs, larvae, juveniles and adults). NOAA PIRO Habitat Conservation Division recommends that the following information be incorporated into the DEA:

1. More background information on the organic waste that is produced from the farming activity. Specifically provide estimates of the total level of organic waste that is produced per unit of time based on: 1) what the mortality rate of the moi is and the outcome of these carcasses, 2) the quantity of feed that is added to the cages per day, and the quantity of feed not consumed by the moi, 3) the quantity of organic material that results from cage cleaning.
2. Detailed description of what the potential impacts (direct, indirect as well as cumulative) are from the proposed action to the benthic community. For example, provide a description of how the additional organic waste that will be produced is expected to affect the invertebrate community (e.g. of direct impact). Also address whether the process of assembling cages in Keehi lagoon will involve impacts to the lagoon substrate as a result of anchoring etc (e.g. of indirect impact), and further address whether the added nutrient enrichment from the farming activity will, together with the two existing sewage outfalls in the vicinity, significantly affect water quality in the area (e.g. of cumulative impact).

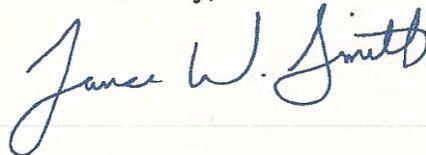
3. Detailed description of current and planned water quality and benthic monitoring (e.g. duration, sampling plan, frequency). Provide comprehensive data/ reports to support the following statements: 1) "currents readily disperse the particulate organic matter assimilated"; 2) "water quality monitoring has indicated waste products are rapidly dispersed and assimilated by the open ocean environment"; and 3) "impacts to of the greater fish production per cage on the water column and substrate under each cage should remain insignificant" (p24-25).

The NOAA PIRO Protected Resources Division is concerned that the proposed expansion could increase the risks of entanglement of marine mammals by quadrupling the size of the aquaculture operation, increasing the number of mooring lines from 12 to 16 and adding mooring lines to secure the feeding barge, as well as due to the increased number and size of the pens. Marine mammals have been known to get their teeth caught in aquaculture pen netting as they attempt to reach the fish within the pens. We ask that you provide additional analysis on the potential for marine mammals becoming entangled in the additional mooring lines and in the type and gauge of netting that the new aquaculture pens will consist of.

It has been observed that aquaculture pens can act as a type of Fish Aggregation Device (FAD), and that marine mammals can be attracted to the FAD to feed on those fish that are attracted to it and to excess feed escaping the pens. We ask that you provide information on the current level of marine mammals "using" the pens to feed on fish that are attracted to the outside of the pens. We also ask that you provide information on marine mammal take mitigation measures that could be used to reduce the likelihood of marine mammal entanglement or behavioral changes resulting from the aquaculture operations.

Thank you for the opportunity to comment on the DEA. Should you have any questions regarding the above comments, please contact Danielle Jayewardene of the Habitat Conservation Division at 808-944-2162, or Jayne LeFors of the Protected Resources Division at 808-944-2277.

Sincerely,



for Alecia Van Atta
Assistant Regional Administrator
Protected Resources Division

Cc: DLNR Office of Conservation and Coastal Lands
Aquaculture Planning and Advocacy LLC

CC Addresses

**DLNR Office of Conservation and Coastal Lands
PO Box 621
Honolulu, HI 96809**

**Aquaculture Planning and Advocacy LLC
47-215 Iuiu St.
Kaneohe, HI 96744**



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Dr. Alecia Van Atta
Assistant Regional Administrator
Protected Resources Division
National Marine Fisheries Service
NOAA
1601 Kapiolani Blvd, Suite 1110
Honolulu, Hawaii 96814

Dear Dr. Van Atta:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the proposed expansion of the Hukilau Foods (HF) State ocean lease off Ewa Beach, Oahu. You indicate the HF site has been designated Essential Fish Habitat (EFH) by several Western Pacific Regional Fishery Management Council (WESTPAC) Plans, as has hundreds of square miles of State marine waters. HF understands the comments incorporate concerns of both the Protected Resources and Habitat Conservation Divisions. HF's responses to your recommendations follow in the order of your comments.

Habitat Concerns

1. Your agency is interested in more background information on the organic waste that is produced by the expanded farm.
 - a. Mortality rates vary, but a typical daily single cage mortality rate would be up to 10 fish per day. After a harvesting event, mortalities may increase slightly. Morts are removed daily by divers. Carcasses are disposed of on land and go to a fish waste processor where they are converted to fertilizer.
 - b. Feeding schedules for the expanded farm are to be worked out later. A gross estimate of average daily feeding rate per 6000 m³ cage at full capacity is 3472 lbs/cage /day. Generally, fish feed assimilation efficiency is around 87% or 3021 lbs and waste feed generated would be 451 lbs/cage /day. Note, at a minimum 0.1 knot current, it has been calculated 217 million gallons of seawater flows through the smaller 3000 m³ cage in a day, which will facilitate dispersion, recycling and returning nutrient material to the food web. Normal average current speeds are 2 to 3 times this value (see DEA). Moreover, this pattern of strong, consistent ocean currents facilitating rapid mixing and assimilation of fish waste products has been documented by monitoring at the Kona Blue Farm on the Big Island, as well as for Snapper Farm in Puerto Rico.
 - c. HF has no firm estimate of particulate material generated from cage cleaning. What can be said is that grazers at the site tend to keep epiphytes and attached invertebrates down and a regular cleaning schedule keeps the amount of material dislodged at any cleaning manageable, such that it does not accumulate around cages.
2. HF is required to conduct regular benthic sampling, as part of its maintaining Company permits. The DEA describes observations made on the impacts of farm activities on the benthic community under the cages. In general, the main impact is a shift in polychaete species and

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abundance from those represented by the control stations to those that are considered opportunistic and their presence are indicators of organic enrichment. Generally, this type of shift in species composition and abundance is typical of the impact of rain events and non-point source nutrient inputs on nearshore waters. The shift in species is not deemed ecologically significant and appears to be reversible as described in the DEA.

The process of assembling cages in Keehi Lagoon before they are towed to the farm site for securing to the mooring grid will not impact the substrate in Keehi Lagoon. Cages don't come in contact with the substrate. HF believes that since Keehi Lagoon is a working harbor, additional details on this subject are not needed in the EA.

HF anticipates securing a Zone of Mixing (ZOM) approximately the size of its existing ZOM, illustrated in the DEA, though it will extend more out to sea. The definition of ZOM is the area in which measured water quality parameters must return to ambient levels at its limits. Therefore, there will be no cumulative impact of the farm on the ocean outfall discharges; both of which also maintain ZOMs and their ZOMs do not overlap with HF's ZOM.

3. The DEA describes in detail the existing water quality and benthic monitoring plans. The plans for the expanded farm will be negotiated with the Department of Health and the Department of Land and Natural Resources, the responsible agencies, and will be generally similar to the existing plans. The plans are not available at this time and will be negotiated when the final project configuration is known.

Regarding the apparent questions of whether the currents at the site are adequate to disperse the waste stream and the ocean environment is sufficient to adequately assimilate the particulate and dissolved material, HF provides the following comments. To reiterate, with a minimum current of 0.1 knot, a single 3000 m³ cage has 217 million gallons of sea water passing through it in a day. Normal current speeds are 2 to 3 times this value (see Appendix 1). The expanded farm with 6000 m³ cages should have ample sea water volumes for dispersion and assimilation of particulate and dissolved waste products.

Further, Hawaii's subtropical, ocean waters are oligotrophic and nitrogen limited, the main nitrogen metabolite of fish is ammonium and the highest uptake rate for nitrogen sources by phytoplankton (which can double in biomass in a day) is ammonium. Nutrient uptake by phytoplankton, as well as attached epiphytes, will tend to reduce dissolved waste loading and facilitate return of nutrients to the food web. Similarly, particulates will be consumed by resident fish and invertebrate species. Lastly, in the seven years of operation, HF has met State receiving water standards and anticipates continuing to do so with the expanded project.

Substrate impacts have been discussed above. Should excess nutrient issues arise, mitigation measures are available as discussed in the DEA.

Protected Species Concerns

HF reiterates, that while intuitively adding a few lines and cages to the farm may be perceived as increasing entanglement risk, please consider the following information. Cage netting, which is maintained taut, will be 1.378 in. mesh and made of Spectra fiber- an extremely strong, UV resistant, synthetic material developed by NASA. HF is not in the whale sanctuary and whales and other marine

mammals are rarely observed in the vicinity of the site. Further, our research has indicated there is no documented case of a marine mammal entanglement in an open ocean farm. In addition, we cite the comprehensive analysis by Celikkol in the DEA and he concluded that the chance of entanglement is unlikely to very unlikely due to the construction characteristics of the Sea Station cages.

Best practice, which HF follows, is to keep mooring lines and cage netting taut at all times to minimize the chance of entanglement by marine mammals. HF has included provisions in the CDUA Emergency Response Plan, that should marine mammals be observed at the site, the appropriate authorities will be notified and appropriate actions taken at their direction.

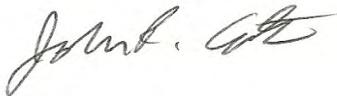
Regarding your second concern about marine mammals using the cages to feed, we have never observed marine mammals feeding at the HF site. As such, marine mammal take mitigation measures have not been a necessary consideration and HF does not anticipate having to address the issue with the expanded farm.

In conclusion, consider that the fish farm cages will occupy approximately two surface acres of ocean and the anchoring system will occupy 0.025 acres of substrate. Compare this to the hundreds of miles of sand bottom designated as EFH by WESTPAC and in our view the potential impact is not significant. Moreover, the farm will sustainably generate millions of pounds of fish for the local market from this space, which will contribute a significant positive benefit of lessening pressure on local fishery resources. Direct evidence for this is the demand for the HF product has substantially increased with the closure of the Main Hawaiian Islands bottom fishery.

HF believes the expanded open ocean fish farm will not cause any significant adverse impacts on any Essential Fish Habitat (EFH) or any Habitat Area of Particular Concern(HAPC) for any of the organisms listed in your letter. Furthermore, the HF expanded operation is not likely to lead to significant negative physical, chemical, or biological alterations to the ocean habitat or result in any significant alteration to waters and substrate necessary for spawning, breeding, feeding, and growth of harvested species for their prey.

We appreciate your participation in the environmental review process.

Sincerely,



John R. Cates
President



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2009 MAY 22 P 3 54

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:DH

CDUA: OA-3506

Acceptance Date: April 20, 2009
180-Day Exp. Date: October 17, 2009
MAY - 4 2009

MEMORANDUM

TO: Division of Aquatic Resources, Division of Conservation and Resource Enforcement, Division of Boating and Ocean Recreation, Oahu District Land Office, Engineering Division

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application (CDUA) OA-3506

APPLICANT: Hukilau Foods, John R. Cates, P.O. Box 335, Kailua, Hawaii 96734

REQUEST: Expand the Existing Moi (*Polydactylus sexfilis*) Aquaculture Farm an Additional 33.51 Acres to 61.59 acres and Expand Lease for State Marine Waters for Aquaculture Facility

LOCATION: Two Miles Offshore Ewa Beach, Island of Oahu

PUBLIC HEARING: YES X NO

Attached please find a copy of the subject CDUA, and our Department's Notice of Acceptance. We would appreciate your review and comment on this CDUA by the suspense date by **June 1, 2009**. We are including a copy of the Draft Environmental Assessment (DEA). Should you require additional information please call Dawn Hegger at the OCCL 587-0380. If no response is received by the suspense date, we will assume there are no comments.

(X) Comments Attached

() No Comments

Signature
5/22/09
Date

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

OCCL/DawnHegger
Ref.:CDUAOA3506ExpandMoiAquacultureFarm
Oahu.685

COMMENTS

- () We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- () Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone ____.
- (X) **Please note that the National Flood Insurance Program does not regulate activities under water.**
- () Please note that the project must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- () Mr. Robert Sumitomo at (808) 768-8097 or Mr. Mario Siu Li at (808) 768-8098 of the City and County of Honolulu, Department of Planning and Permitting.
- () Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.
- () Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.
- () Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

- () The applicant should include water demands and infrastructure required to meet project needs. Please note that projects within State lands requiring water service from the Honolulu Board of Water Supply system will be required to pay a resource development charge, in addition to Water Facilities Charges for transmission and daily storage.
- () The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

- (X) **Additional Comments: We do not have any objections to expand the existing Moi (Polydactylus sexfilis) Aquaculture Farm an additional 33.51 acres to 61.59 acres and expand lease for State Marine Waters for Aquaculture Facility.**

- () Other: _____

Should you have any questions, please call Ms. Suzie S. Agraan of the Planning Branch at 587-0258.

Signed: 
ERIC T. HIRANO, CHIEF ENGINEER

Date: 5/22/09



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Eric Hirano
Chief Engineer
Engineering Division
Department of Land and Natural Resources
1151 Punchbowl Street, Room 221
Honolulu, Hawaii 96813

Dear Mr. Hirano:

Thank you for reviewing Hukilau Foods LLC Conservation District Use Application and Draft Environmental Assessment. You indicate that your office has no objections to the expansion of the lease of State Marine Waters for moi culture.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

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Suspense Date: 6/1/2009

State of Hawaii
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

Date: 5/28/09

MEMORANDUM

TO: Bob Nishimoto, Program Manager
FROM: Thomas Iwai, Jr., Aquatic Biologist
THRU: Alton Miyasaka, Aquatic Biologist
SUBJECT: Comments on Special Management Area Major Use Permit

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2009 JUN -2 P 2: 27
DEPT. OF LAND &
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STATE OF HAWAII

Comment	Date	Request	Receipt	Referral
		8/1/08	7/3/08	7/23/08

Requested by: Morris M. Atta
Department of Land and Natural Resources, Land Division

Summary of Proposed Project

Title: Expansion of Existing Moi Culturing Facility
Project by: Hukilau Foods, John R. Cates
Location: Offshore Ewa Beach, Oahu

We do not have an objection at this time to Hukilau Foods request to expand the existing moi offshore aquaculture farm to 61.59 acres. The biological and environmental impacts to the existing and requested area for expansion should be minimal. We would like to make two notes. The 1st is on pg. 11 of the proposal where the applicant notes that, "In 7 years of operation, Hukilau Foods notes there has been little regular recreational or commercial use of the existing lease area or waters in the vicinity," but admit, "Hukilau Foods has discouraged anchoring of boats in the lease area for fishing, snorkeling or SCUBA diving due to concerns over staff and public safety, potential for interruption of farm activities and company liability." If the applicant discourages public access and use of the area, one would expect recreational-commercial activity to be minimal. While we note the need for operational security, there may be a fine line between the effectively exclusive use of the area, and reasonable public use. Our 2nd note is the potential change in the level of night-time activity between the current and proposed expanded area. The "permanent" mooring on site of the "security barge" makes good business sense but may draw unwanted attention and increased boating traffic and related aquatic activities; especially at night since the barge will act like a marker buoy and attract users to the site.



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Thomas Iwai Jr.
Aquatic Biologist
Division of Aquatic Resources
Department of Land and Natural Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawaii 96813

Dear Mr. Iwai:

Thank you for your review of Hukilau Foods LLC (HF) Conservation District Use Application and Draft Environmental Assessment (DEA). You state that you do not have an objection at this time to Hukilau Foods request to expand the existing moi offshore aquaculture farm. You further state the biological and environmental impacts to the existing and requested expansion area should be minimal.

Regarding your two notes on the DEA, we offer the following responses. Your first note points out that we observed that the existing and proposed expansion site has little recreation or commercial use. But we also state that HF has discouraged anchoring of boats in our existing lease area for purposes of fishing, snorkeling and SCUBA diving (water depth far exceeds that used for recreational diving). You suggest that this would cause less public use. We implemented this policy and are requesting a more formalized statement of this policy in the expanded lease because of concerns over staff safety, public safety, interruption of farm operation and liability. In practice, HF does not want boats to drop anchor on its cages or get entangled in mooring lines.

The HF farm site is two miles off Ewa Beach in a large area of barren sand bottom not conducive to maintaining fish populations; hence, it is generally not attractive to the average fisher. Since the HF cages are submerged 30 to 40 feet below the surface, troll and drift fishing can occur, and this type of fishing was not discouraged. HF has viewed this type of use by transiting and non-anchoring boats as reasonable use by the public and the public that have occasionally discovered the site thus far have cooperated with HF staff.

Your second note has to do with the potential for increased night diving by the public because of the permanently anchored feed/security barge. We appreciate you calling attention to this possibility and note that the cages and feed/security barge will have 24/7 security cameras to help deter such activities. Thus far, we have not observed any night diving on the site with the system.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

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**DEPARTMENT OF BUSINESS,
ECONOMIC DEVELOPMENT & TOURISM**

OFFICE OF PLANNING

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
ABBAY SETH MAYER
DIRECTOR
OFFICE OF PLANNING

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Phone: (808) 587-2846
Fax: (808) 587-2824

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Ref. No. P-12595

June 1, 2009

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Mr. Samuel J. Lemmo
Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
P.O. Box 621
Honolulu, Hawaii 96809

Dear Mr. Lemmo:

Subject: Conservation District Use Application (CDUA) OA-3506
Expand Existing Moi Aquaculture Farm
Grove Farms Fish and Poi, LLC, dba Hukilau Foods LLC
Two miles off Ewa Beach, Oahu

Thank you for the opportunity to review and comment upon the Conservation District Use Application for the Hukilau Foods LLC Moi Aquaculture Farm expansion. The Office of Planning has no comments at this time. In so stating, the Office offers no judgment of either the adequacy of the document/application itself or the merits of the proposed project.

If you have any questions, please contact our Land Use Division at 587-2842.

Sincerely,

Abbey Seth Mayer
Director



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Abbey Seth Mayer
Director
Office of Planning
P.O. Box 2359
Honolulu, Hawaii 96804

Dear Mr. Mayer:

Thank you for your review of Hukilau Foods LLC Conservation District Use Application and Draft Environmental Assessment. We understand the Office does not have any comments on the proposed project at this time.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

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44727

LINDA LINGLE
GOVERNOR



BRENNON T. MORIOKA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRIAN H. SEKIGUCHI

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09 JUN -3 AIO 25

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5007

DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

IN REPLY REFER TO:
STP 8.3269

May 28, 2009

TO: THE HONORABLE LAURA H. THIELEN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
DEPARTMENT OF LAND AND NATURAL RESOURCE

ATTN: SAMUEL J. LEMMO, ADMINISTRATOR
OFFICE OF CONSERVATION AND COASTAL LANDS

FROM: BRENNON T. MORIOKA, PH.D., P.E. *B.T.M.*
DIRECTOR OF TRANSPORTATION

SUBJECT: EXPAND EXISTING MOI AQUACULTURE FARM AN ADDITIONAL 33.51
ACRES TO 61.59 ACRES AND EXPAND LEASE FOR STATE MARINE
WATERS, TWO MILES OFFSHORE EWA BEACH, ISLAND OF OAHU -
CONSERVATION DISTRICT USE APPLICATION (CDUA) OA-3506

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NATURAL RESOURCES
STATE OF HAWAII

Thank you for requesting the State Department of Transportation's (DOT) review of the subject project.

DOT understands that the applicant, Hukilau Foods, proposes a seaward expansion of an existing moi aquaculture farm by an additional 33.51 acres. The site is located approximately two miles off of Ewa Beach.

Given the project's location and the lack of any stated plans for the company to use the State harbors, DOT does not anticipate any significant adverse impacts to its transportation facilities at this time.

DOT appreciates the opportunity to provide comments. If there are any questions, please contact Mr. David Shimokawa of the DOT Statewide Transportation Planning Office at (808) 587-2356.



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Dr. Brennon T. Morioka
Director of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Dr. Morioka:

Thank you for your review of Hukilau Foods LLC Conservation District Use Application and Draft Environmental Assessment. We understand the Department does not anticipate any significant adverse impact to its transportation facilities at this time. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

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STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

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2009 JUN 15 A 8: 21

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

HRD09/4311

June 9, 2009

Sam Lemmo
Office of Conservation and Coastal Lands
PO Box 621
Honolulu, Hawai'i 96809

RE: Request for comments on the proposed Hukilau Foods moi aquaculture farm Conservation District Use Application (CDUA) 'Ewa Beach, offshore O'ahu.

Aloha e Sam Lemmo,

The Office of Hawaiian Affairs (OHA) is in receipt of the above-mentioned letter dated May 4, 2009. OHA has reviewed the project and offers the following comments.

OHA understands that this application seeks to expand the existing facilities seaward to 61.59 acres, which is nearly double the current size to farm a native species of moi for commercial use.

We do note that page 41 of the Draft Environmental Assessment states that:

However, both native-Hawaiian and non-Hawaiian commercial and recreational fishers have on occasion taken advantage of the fish aggregating characteristics of the cage system and occasionally harvested important species, such as opelu. HF (applicant) has cooperated with commercial fishers in these instances and in return fishers have avoided farm operations. In terms of the proposed limitations on access, HF anticipates a continuation of the mutual respect and cooperation with commercial fishers.

OHA sees that the CDUA application on page nine states that, "It is envisioned that boat transit over and through the site and troll and drift fishing will continue." If there is free transit and the ability to fish over and through the project area, other than for bottom fishing, OHA is unclear as to what limitations on access in this instance the applicant is referring to.

Sam Lemmo
June 9, 2009
Page 2

Additionally, if there is free transit and the ability to fish over and through the project area, OHA is unclear as to why fishers would have to avoid farm operations other than to avoid collision with other boats.

OHA seeks clarification on these points and we also urge that the rights of fishers and our beneficiaries in the area be recognized by the applicant and possibly not be abridged.

We also ask that the applicant include a monitoring and management plan concerning any interactions with marine mammals, sea turtles, and sharks, which should be developed in consultation with the regulatory agencies from the state and federal government. Cultural considerations for these species should also be considered.

For example, to some of our beneficiaries the shark is a sacred animal, and is considered a member of our 'ohana. When developing a shark management plan for the aquaculture farm, OHA advocates ensuring that measures to keep the sharks away from working divers must be culturally appropriate.

Further, to ensure that this proposal is in the public interest, we ask that the applicant consider setting a percentage of their harvest to replenish local stocks of fish with mature, breeding fish.

Thank you for the opportunity to comment. If you have further questions, please contact Grant Arnold by phone at (808) 594-0263 or e-mail him at granta@oha.org.

'O wau iho nō me ka 'oia'i'o,



Clyde W. Nāmu'o
Administrator



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Clyde Namuo
Administrator
Office of Hawaiian Affairs
711 Kapiolani Blvd., Suite 500
Honolulu, Hawaii 96813

Dear Mr. Namuo:

Thank you for your review of the Draft Environmental Assessment (DEA) for the expansion of the Hukilau Foods LLC (HF) State ocean lease off Ewa Beach, Oahu. HF believes the concerns you raise are adequately addressed in the Conservation District Use Permit Application (CDUA) and the DEA. We provide the following comments and clarifications for your further consideration.

You state the Office of Hawaiian Affairs (OHA) is unclear as to what limitations on access HF is referring to on p. 41 of the DEA. This section discusses cooperation between HF and several commercial fishers that have fished the site to take advantage of occasional concentrations of opelu. To clarify, the fish farm is located two miles off Ewa Beach and the cage systems are submerged 30 to 40 feet below the surface, except during any significant maintenance. In this case the limitations refer to no anchoring of boats for fishing, snorkeling or SCUBA diving. The EA text will be changed to reflect this point.

To clarify further, HF has discouraged anchoring of boats in the lease site for fishing, snorkeling and SCUBA diving due to concerns over public and staff safety, potential interference with farm operations, cage and mooring system entanglements, and liability issues. HF is requesting a more formal limitation of no anchoring of boats to be included in its new lease for the expanded site. Fishers' rights, other than this express limitation, will be respected.

While anchoring of boats is being limited, since cages are submerged, boats may freely troll or drift fish and transit through the site as you state, with the express stipulation they avoid interference and collisions with work boats and working divers. HF also points out it has cooperated with several native Hawaiian commercial fishers who wished to fish the occasional opelu schools present. These native Hawaiian fishers, by mutual agreement with HF (see DEA comments letters), avoid interference and have become an integral part of our best management practices. This organized and mutually agreed cooperation has worked well to date and should continue.

As pointed out in the CDUA and DEA, the HF site is not frequented by protected marine mammals. Moreover, the HF emergency response plan includes a provision that, "In the event of a threatened or endangered marine mammal presence or interaction with the farm, the local NOAA Fisheries Office and State marine mammal officials will be contacted for assistance." Further, HF's years of observations indicate green sea turtles that are occasionally present at the site are not affected by farm operations and their protected status is respected by HF. In addition, sharks are occasionally a part of the cage ecosystem and after seven years of operation there have been no significant incidents with HF divers. Nonetheless, HF is fully aware of the cultural significance of sharks, turtles and marine

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Mr. Namuo
July 21, 2009
Page 2

mammals to native Hawaiians and will continue to be respectful of cultural considerations in its operations.

OHA suggests setting a percentage of HF's harvest to replenish local stocks of moi with mature breeding fish. Best management practices for stock enhancement suggests stocking a smaller fish is ecologically better for the environment. HF is on the record for offering hundreds of thousands of free seed stock to the State for wild stock enhancement of moi. Thus far, the offer has been declined. We strongly agree with the concept that excess moi fingerlings should be used for enhancing the local fishery.

HF, at a previous meeting with the OHA Board of Trustees, received a similar suggestion from the Board to find ways to support traditional native Hawaiian fishponds. Subsequently, HF donated hundreds of thousands of free seed stock to fishponds in Kaneohe Bay, Heeia and Molii fishponds, and looks to continuing this practice in the future.

We hope these responses clarify the documents and we appreciate your participation in the environmental review process.

Sincerely,



John R. Cates
President

LINDA LINGLE
Governor



SANDRA LEE KUNIMOTO
Chairperson, Board of Agriculture

DUANE K. OKAMOTO
Deputy to the Chairperson

State of Hawaii
DEPARTMENT OF AGRICULTURE
Aquaculture Development Program
1177 Alakea Street #400
Honolulu, Hawaii 96813

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Email: info@hawaiiacquaculture.org
http://www.hawaiiacquaculture.org

Tel: (808) 587-0030
Fax: (808) 587-0033

2009 MAY 29 A 11: 32

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

May 27, 2009

Mr. Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
Post Office 621
Honolulu, Hawaii 96809

Dear Mr. Lemmo:

Thank you very much for this opportunity to review the Conservation District Use Application (CDUA) OA-3506 for Hukilau Foods' project to expand the existing moi aquaculture farm.

Based on Hukilau Foods' track record of ten years of fish farming at the site, without significant problems, and the comprehensive information provided for the proposed expansion; the Hawaii Department of Agriculture-Aquaculture Development Program strongly supports the permit application and project proposal.

This project will help to support Hawaii's economy and provide employment for our aquaculture industry sector.

Sincerely,

Todd Low
ADP Manager

c: Sandra Lee Kunimoto, DOA





HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Todd Low
Manager
Aquaculture Development Program
Department of Agriculture
1177 Alakea Street, #400
Honolulu, Hawaii 96813

Dear Mr. Low:

Thank you for your review of Hukilau Foods LLC (HF) Conservation District Use Application and Draft Environmental Assessment. You state that based on HF's 10-year track record of fish farming at the site without significant problems and the comprehensive description of the proposed expansion, the Aquaculture Development Program strongly supports the project. You also cite the project's strong economic development and job generation potential.

Thank you very much for your strong project support. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

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HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Dr. Daniel Polhemus
Administrator
Division of Aquatic Resources
Department of Land and Natural Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawaii 96813

Dear Mr. Polhemus:

Thank you for your review of Hukilau Foods LLC (HF) Conservation District Use Application and Draft Environmental Assessment. We noted two comments on the HF documents, one by Mr. Thomas Iwai, Jr., Aquatic Biologist, which we answered by separate letter. Dr. Jeffrey Walters, State Sanctuary Co-Manager, Hawaiian Islands Humpback Whale National Marine Sanctuary, indicated that he has no comments or concerns with the HF proposed expansion.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

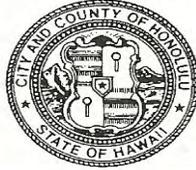
808.841.4956

www.hukilaufoods.com

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honolulu.gov • CITY WEB SITE: www.honolulu.gov

MUFI HANNEMANN
MAYOR



May 29, 2009

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

2009 JUN -1 A 8:16

DAVID K. TANOUE
DIRECTOR

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

ROBERT M. SUMITOMO
DEPUTY DIRECTOR

2009/ELOG-1091(AA)

Mr. Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands
Department of Land and Natural Resources
State of Hawaii
Post Office Box 621
Honolulu, Hawaii 96809

Dear Mr. Lemmo:

Subject: Conservation District Use Application (CDUA) No. OA-3506
Expansion of Moi Aquaculture Farm
Offshore of Ewa Beach - Oahu

We have reviewed the above-referenced application and have no comments to offer on the project. Thank you for the opportunity to review the application.

Should you have any questions, please contact Ann Asaumi of our staff at 768-8020.

Very truly yours,

A handwritten signature in black ink, appearing to read "D. K. Tanoue".

David K. Tanoue, Director
Department of Planning and Permitting

DKT:fm

g:posseworkingdirectory\ann\cduacom.doc



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. David K. Tanoue
Director of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Tanoue:

Thank you for your review of Hukilau Foods LLC Conservation District Use Application and Draft Environmental Assessment. We acknowledge that you have no comments and appreciate your participation in the environmental review process.

Sincerely,

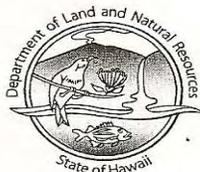
John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

RUSSELL Y. TSUJI
FIRST DEPUTY

KEN C. KAWAHARA
DEPUTY DIRECTOR - WATER

2009 MAY 28 A 10:52

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
IAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:DH

CDUA: OA-3506

Acceptance Date: April 20, 2009
180-Day Exp. Date: October 17, 2009
MAY - 4 2009

MEMORANDUM

TO: Division of Aquatic Resources, Division of Conservation and Resource Enforcement, Division of Boating and Ocean Recreation, Oahu District Land Office, Engineering Division

FROM: Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

SUBJECT: REQUEST FOR COMMENTS
Conservation District Use Application (CDUA) OA-3506

APPLICANT: Hukilau Foods, John R. Cates, P.O. Box 335, Kailua, Hawaii 96734

REQUEST: Expand the Existing Moi (*Polydactylus sexfilis*) Aquaculture Farm an Additional 33.51 Acres to 61.59 acres and Expand Lease for State Marine Waters for Aquaculture Facility

LOCATION: Two Miles Offshore Ewa Beach, Island of Oahu

PUBLIC HEARING: YES X NO

Attached please find a copy of the subject CDUA, and our Department's Notice of Acceptance. We would appreciate your review and comment on this CDUA by the suspense date by **June 1, 2009**. We are including a copy of the Draft Environmental Assessment (DEA). Should you require additional information please call Dawn Hegger at the OCCL 587-0380. If no response is received by the suspense date, we will assume there are no comments.

() Comments Attached
 No Comments

Signature
Date 5/22/09

MAY11'09 AM11:14 BOR-D
MAY 5'09AM 7:57:30R DJU



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Edward Underwood
Administrator
Division of Boating and Ocean Recreation
Department of Land and Natural Resources
1151 Punchbowl Street, Room 300
Honolulu, Hawaii 96813

Dear Mr. Underwood:

Thank you for your review of Hukilau Foods LLC Conservation District Use Application and Draft Environmental Assessment. We acknowledge that you have no comments and appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

808.841.4956

www.hukilaufoods.com

D. Example of Identical Form Email Letters and HF Responses, with a List of Recipients

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/19/2009 11:01:26 A.M. Hawaiian Standard Time
From: framodda@yahoo.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I have significant concerns about the expansion of Hukilau Foods offshore fish farm in Mamala Bay and would like to formally request that an Environmental Impact Statment be prepared.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period. Although this increase would be staggered, the cumulative impacts of the additional biomass are unknown and warrant further study. Additionally, community members - especially Native Hawaiians - should be consulted. This would be most appropriately done by consulting with widely recognized organized Native Hawaiian groups such as the Kanaka Council.

The current DEA fails to sufficiently address the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to increase its profit by intensifying production in a way that could cause substantial harm to public resources. Whatever impacts Hukilau Foods will have on existing natural resources will be shared by all of us, while profits will be only theirs. Therefore, it is imperative that Hukilau Foods complete a full environmental impact statement before proceeding.

Sincerely,

Ramoda Anand
1250 Olinda Rd
Makawao, HI 96768

(808) 572-2562

Friday, June 19, 2009 AOL: JSCorbin



Name
Address

Dear Mr, Ms :

Thank you for your comments on the Draft Environmental Assessment (DEA) for the proposed expansion of the Hukilau Foods LLC (HF) State ocean lease two miles off Ewa Beach, Oahu. The carefully chosen HF site has been in commercial production of the native fish moi, for over seven years, without any significant issues arising with Federal or State agencies, native Hawaiians, and the general public. Moreover, the Company has well over 2000 days of observations at the existing and proposed expansion site on which to base its statements.

HF believes the general concerns you raise from your review of the DEA are adequately addressed in the Conservation District Use Permit Application (CDUA) and the DEA. We provide the following comments, clarifications and document highlights for your further consideration.

a. Wild fish populations

Important aspects of the effects of the expanded project on wild fish populations are discussed in the CDUA and DEA, including recruitment, stock escape, and fish aggregating characteristics. The farm will not have a significant effect on recruitment to wild populations of organisms considering the relative size of the farm and the large expanse of available natural habitat for reproduction and recruitment on the South Shore of Oahu.

To date, there has been no known escape of fish from HF cages. Concerns over potential for disease transfer to wild stock are addressed through rigorous stock testing and management procedures described in the DEA, as well as 24/7 site security through remote cameras. Since HF fish are genetically still wild fish and escape event would be similar to a stock enhancement event regularly conducted by the State.

HF has observed that the existing cage farm has attracted marine life and essentially has created a mini-ecosystem in what was relatively barren part of the ocean. These cage structures generally attract a host of benthic invertebrates and algae, as well as, benthic, reef and pelagic species of fish; similar to the State managed Fish Aggregation Device (FAD) system. Broadly, HF experience indicates the mini-ecosystem is a positive addition to the ocean and the cage system will come into dynamic balance with the much larger and diverse ocean environment.

b. Conflicts with marine mammals, endangered species and fishers

3-1850 Kaumualii Highway P.O. Box 662069 Lihue, HI 96766-7069

 808.841.4956

www.hukilaufoods.com

Marine mammal and protected species issues, as well as, site use by local fishers are adequately discussed in the CDDA and DEA. Regarding marine mammals and those species protected by Federal and State law, these species have not been observed at or in the vicinity of the farm, with one exception, green sea turtles. Green sea turtles have been observed on occasion at the HF site. They remain in the area from a few minutes to a few hours, and are not affected by the farm activities.

There have been no conflicts with the few fishers who wish to troll or drift fish at the site and that use will continue. As stated, anchoring of boats in the lease area has been discouraged and a more formal declaration is being requested for the expanded site. The boating public and fishers in particular, have been very supportive and HF has cooperated with experienced commercial fishers to ensure big eyed scad fishing can take place without affecting operations.

c. Feed concerns

The particular fish feed concerns are not specified. HF utilizes a cost-effective, commercially available feed that has the composition of 43% crude protein, with an average conversion ratio of 2 lbs feed to 1 lb fish. This ratio is normal for a relatively new aquaculture species and can be expected to be improved through ongoing research. As HF explained, feeding on the farm is carefully controlled and observed to minimize wastage. According to HF's feed manufacturer, Skretting, fish meal material is sourced from regulated and monitored fisheries that are sustainable.

d. Cultural resource impacts

The particular cultural resource impacts are not specified. HF reiterates that it has been in operation at its existing site two miles offshore for seven years and with the previous research project included, ten years. There have been no cultural resources issues to date and none are anticipated with the expansion. There are no artifacts in the lease area, which averages 150 ft. deep. The HF cultural assessment found no concerns and included consultations with the Office of Hawaiian Affairs, the Ewa Beach Neighborhood Board, and a very knowledgeable, Leeward Oahu, Hawaiian cultural practitioner and activist who confirmed the conclusions.

e. Economic impacts

The economic impacts concerns on Hawaii and mainland markets are not specified. HF believes the economic impacts on Hawaii are overwhelmingly positive; including much needed job generation; increased availability of fresh, high quality seafood; and taxes, lease rents and secondary industry expenditures paid yearly. HF fails to see the relevancy of your concern with U.S. markets, other than to point out that Hawaii export production can have a positive impact by reducing America's \$ 8 billion seafood trade deficit.

You raise several other concerns regarding the HF project and its environmental review addressed below. HF has satisfactorily considered cumulative impacts and expectations are that the expanded lease acreage will accommodate the expanded production capacity given the physical nature of the site, i.e., the relatively strong and consistent currents, the barren sandy substrate suitable for anchoring and the lack of significant marine life in the area. Moreover, a comprehensive, State approved water and substrate quality monitoring program will provide the feedback to sustainably manage the expanded project. Further, the DEA provided sufficient description and detail for interested public agencies and the general public to understand the expanded project and HF believes an Environmental Impact Statement (EIS) is not required.

In addition, regarding seeking community inputs, we highlight the project is undergoing statewide review through the permit process. HF consulted with the Leeward Hawaiian community through the Ewa Beach Neighborhood Board and a very knowledgeable Hawaiian cultural practitioner, as well as, making presentations to the Office of Hawaiian Affairs (OHA), the leading Hawaiian organization in the state. Note, OHA has established a policy to encourage native Hawaiians to become involved to the fullest and highest extent possible in offshore fish farming. Further, it is Hawaiian custom that persons talk to the affected community about a project, in this case, the Leeward community, before beginning the project planning and HF respects that custom.

Finally, please also note that as an Ocean State, it is Hawaii's stated policy that State marine waters can be utilized for commercial, for-profit open ocean aquaculture for the economic benefit of its citizens. The State implemented a rigorous permitting process to govern the siting and expansion of offshore aquaculture in the Hawaiian Islands. The long-range goal is to expand and diversify the Hawaii economy through nurturing aquaculture, a local aquatic food production industry that is economically beneficial, environmentally friendly, socially accepted and culturally appropriate.

We appreciate your participation in the environmental review process.

Sincerely,



John R. Cates
President

List of Recipients

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Kamuela, HI 96743

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Waialua, HI 96791

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Rowena Vaca
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Kailua-Kona, HI 96740

E. Other Email Letters and Responses



Randy Cates
Grove Farm Fish and Poi, LLC, dba Hukilau Foods LLC
P.O. Box 335
Kailua, HI 96744

CC: Dawn Hegger, Department of Land and Natural Resources, Office of Conservation and Coastal Lands, P.O. Box 621, Honolulu, Hawaii 96734; John Corbin, Aquaculture Planning & Advocacy LLC, 47-215 Iui Street, Kaneohe, HI, 96744

Submitted to Applicant and Consultant on June 22, 2009 via email at rcates@hukilaufoods.com and jscorbin@aol.com, respectively.

Submitted to approving agency via fax at 808-587-0455, on this same day.

RE: Proposed Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawaii – Draft Environmental Assessment

Dear Mr. Cates:

On behalf of Food & Water Watch (FWW),¹ I write to express the organization's concerns about the content of the Draft Environmental Assessment (DEA) submitted by Hukilau Foods (HF) for the proposed expansion of Hukilau Foods Offshore Fish Farm. For the reasons outlined below, the Department should not move forward with these plans and should reject this DEA as inadequate. Instead, an environmental impact statement is the appropriate mechanism by which to address the proposed expansion.

Overarching Concerns With Open Ocean Aquaculture

Without adequate safeguards, open ocean aquaculture could damage marine ecosystems, threaten the livelihoods of fishermen and those employed in the tourist industry, and interfere with important cultural traditions and resources.

Open ocean aquaculture is highly controversial, and a variety of publications by researchers, NGOs, and government offices have noted problems associated with the development of this industry. International experience from offshore fish farms should give DLNR cause for concern. Water flowing out of industrial fish farms carries excessive nutrients (e.g., phosphorus and nitrogen),^{2,3} particulates, metals,⁴ pesticides⁵

¹ FWW is a national non-profit consumer advocacy group that works to promote clean, safe seafood for consumers and the use of common resources for the public benefit.

² Holmer, M. et al. "Sedimentation of organic matter from fish farms in oligotrophic Mediterranean assessed through bulk and stable isotope ($\delta^{13}C$ and $\delta^{15}N$) analyses." *Aquaculture*, 262: 268-280, 2007.

³ Islam, Md. Shahidul. "Nitrogen and phosphorus budget in coastal and marine cage aquaculture and impacts of effluent loading on ecosystem: review and analysis towards model development." *Marine*

and other chemicals that may pose serious problems to water quality and the environment.⁶ For example, a salmon farm of 200,000 fish releases as much nitrogen, phosphorus, and fecal matter into the water as is present in the untreated sewage from 20,000, 25,000 and 65,000 people, respectively.⁷ Such waste can contribute to eutrophication in nearby waters,⁸ leading to harmful algae blooms, fish and seabed animal kills, and shellfish poisoning.⁹

Studies have also found increased mercury contamination in surrounding wild-caught fish populations. In one instance, researchers sampled fish caught in the traditional fishing grounds of indigenous people and found that mercury was significantly higher in wild fish caught near the salmon farms than far from them. This contamination was attributed to fish-farm waste, which may be altering the food web, forcing wild fish to eat more highly contaminated organisms. The researchers also believed that the fish farm waste might be tainted with mercury and might be altering water chemistry to make the mercury in surrounding sediments more easily absorbed by aquatic organisms.¹⁰ In addition, the escapement of fish from ocean fish farms is another chronic problem.¹¹

Moreover, a large body of scientific literature exists demonstrating that the use of a wide variety of antibiotics in aquaculture results in increased antibiotic resistance in fish, and the transfer of these resistant pathogens to the bacteria in land animals and to human pathogens. The use of large amounts of antibiotics increases the opportunities for the presence of residual antibiotics in meat and fish products, and thus possibly undermines the ability of doctors to effectively treat human infections.¹²

Furthermore, while fish farming is touted as a way of reducing the pressures on depleted fishing populations, marine aquaculture's feed requirements may actually increase these pressures due to a necessary diet of large quantities of fishmeal and fish oil.¹³ Already, fish farms use a significant portion of world supply of fishmeal and fish

Pollution Bulletin, 50,1: 48-61, January 2005.

⁴ Choi, Monica Heekyoung and Cech, Joseph J. "Unexpectedly High Mercury Level in Pelleted Commercial Fish Feed." *Environmental Toxicology and Chemistry*, 17(10): 1979-1981, 1998.

⁵ U.S. Environmental Protection Agency, "Economic and Environmental Benefits Analysis of the Final Effluent Limitations Guidelines and New Source Performance Standards for the Concentrated Aquatic Animal Production Industry Point Source Category," June 2004.

⁶ *Id.*

⁷ See Goldberg, R., Elliot M., and Naylor, R., "Marine Aquaculture in the United States, Environmental Impacts and Policy Options," 2001, citing Hardy, R.W., 2000b, Fish, Fish feeds, & Nutrition in the New Millennium, *Aquaculture Magazine* 26 (1): 85-89.

⁸ *Id.*

⁹ See Scottish Association for Marine Science and Napier University, "Review and Synthesis of the Environmental Impacts of Aquaculture, 2002."

¹⁰ Dubruyn, A.M., Trudel, M., Eyding, N.A., Harding, J., McNally, H., Mountain, R., Orr, C., Urban, D., Verenitch, S., Mazumder, A., Ecosystemic Effects of Salmon Farming Increase Mercury Contamination in Wild Fish, *Environ. Sci. & Technol.* Published on web April 19, 2006.

¹¹ "Norwegian Aquaculture: Status Report." *Aquaculture Magazine*, 33(1): 19-21, January-February 2007.

¹² Reviewed in Cabello, F.C., *Heavy use of prophylactic antibiotics in aquaculture: a growing problem for human and animal health and for the environment*, *Environmental Microbiology* (2006) 8 (7), 1137-1144.

¹³ Naylor, R.L., Goldberg, R.J., Primavera, J.H., Kautsky, N., Beveridge, M.C.M., Clay, J., Folke, C., Lubchenco, J., Mooney, H. and Troell, M. Effect of aquaculture on world fish supplies, *Nature* 405, 1017-

oil from wild marine sources, such as sardines, herring, and menhaden.¹⁴ Removing these fish from the ocean to feed farmed fish denies food to whales and other ocean mammals and to larger predatory fish and sea birds.

Offshore aquaculture could have negative socioeconomic effects, as well. Offshore aquaculture could harm U.S. fishing communities, which are dependent on healthy ecosystems and wild fish populations for their economic livelihood. Fish farming could also harm the existing U.S. fishing industry by lowering prices for wild fish caught by U.S. fishermen.

Given the potential dangers posed to the environment, consumers, and fishermen by industrial fish farming, we urge the DLNR to act cautiously so that this project does not cause some of the same types of problems.

Overview Of The Proposed Expansion

As stated in the DEA, HF offshore fish farms proposes to quadruple its industrial production of farmed moi from 1.2 million pounds per year to up to 5 million pounds per year. It plans to do so by doubling the number of sea cages (from four to eight), with each cage doubling in size (from 3000 m³ to 6000m³). In 2007, HF was filling each cage with 130,000 Pacific Threadfin (aka moi). This would mean that each cage in the proposed expansion would contain 260,000 moi. Multiplied by eight cages, and the amount of moi raised at a given moment would be a whopping 2,080,000 fish.

This would mean that the amount of fish waste coming from the project would be approximately equal to the amount of untreated sewage generated by the entire city of Boston. Yet despite these numbers, HF believes that the crowding of over two million fish in tight quarters will have no impact on the marine environment, and that their feces will simply wash away. HF appears to subscribe to the old and erroneous rhyme: “the solution to pollution is dilution.”

The current HF fish farming operation is located near a known dead zone, a protected marine sanctuary, a coral reef, and within an area contaminated by dredged material in Mamala Bay. Nonetheless, HF desires to expand its current ocean lease of 28 acres to 61 acres, to allow room for the extra sea cages. In addition, while it requests permission to permanently moor a feed/security barge on site, it simultaneously seeks to restrict the anchoring of all other boats within the 61-acre expanse. Furthermore, to decrease its “insurance liability,” it requests an outright ban on snorkeling or SCUBA diving within its area. Installing new cages also means removing the old ones and their anchors, and re-mooring the new structures, using sixteen “Danforth” style anchors (two per sea cage). Each anchor weighs 6,000 – 8,000 pounds and is designed to penetrate the

1024 (2000).

¹⁴ Tacon, Albert et al. “Use of Fishery Resources as Feed Inputs to Aquaculture Development: Trends and Policy Implications.” FAO Fisheries Circular No. 1018, Food and Agriculture Organization of the United Nations, Rome, 2006.

sea floor. The central cement ballast weight of the sea cage that rests on the ocean floor weighs 14,300 pounds.

While the DEA states that HF has never received a single complaint in all of its years of operation, it apparently fails to mention several freely-available reports outlining several deficiencies with the HF industrial operations, as discussed below.¹⁵

Comments

The DEA Inadequately Assesses the Project's Cumulative Impacts.

The DEA's discussion of the proposed HF expansion is completely inadequate. In less than half a page (see p. 41), the DEA dismisses of cumulative impacts by merely restating the tired proposition that because of the strong currents, all wastes will wash away and any impacts are expected to be "manageable and insignificant." It avoids examining other activities in the area, which, in conjunction with the proposed expansion, might play a significant role in environmental degradation.

The DEA fails to consider publicly available data from the U.S. Geological Survey on Mamala Bay area off of Ewa Beach. This area, which includes the location of the HF fish farms, was found to have been contaminated by other human caused activities: "For more than a century, material dredged from Pearl and Honolulu Harbors has been dumped in Mamala Bay off Oahu, Hawaii. Human activities add other materials to the bay as well: wastewater from Honolulu and its suburbs, shipyard contaminants and lead paint from ships, agricultural fertilizers leached from fields. *It is not known how the dredged material and contaminants are affecting the environment*"(emphasis added).¹⁶ Neither is it known how the excess food and fecal pollution from the HF sea cages interacts with these elements.

The DEA also fails to address the dead zone located just off the coast of Ewa Beach (Virginia Institute of Marine Science), as well as the cumulative impacts that the proposed expansion would have on the Barbers Point Marine Protected Area, found just southwest of the dead zone. In fact, there is no effort to even determine the cause of the dead zone – that is, whether the excess nutrients are due to the years of operation of Mr. Cates' fish farms, runoff from the island, or a combination of both.

In an earlier section of the DEA (see p. 25), it states that HF is proximate to a coral reef (1,800 feet away), but outright dismisses this as a problem, stating that "the prevailing currents" take the refuse away from the reef. More information is needed about the "repeated sampling" that demonstrated there was no effect on the coral reef. What were the findings? Who did the sampling? FWW recommends that HF use effective water quality models to achieve a more accurate prediction of the effects of pollution, such as the SUNTANS model, detailed on pp. 5-6.

¹⁵ [Ostrowski piece, Report of Marine Aquaculture Task Force.]

¹⁶ <http://walrus.wr.usgs.gov/mamalabay/>

Finally, there is no mention of the statewide cumulative impacts that this fish farm along with the others currently in operation (Kona Farms – yellowtail; Indigo Farms – moi, and potentially grouper and porgies) and soon to be planned (Hawaiian Ocean Technology, Inc. – ahi tuna) would have on the regional water quality. In sum, the cumulative impacts section of the DEA must be entirely redone, and an honest and meaningful analysis should take its place.

The DEA Fails To Adequately Consider Water Quality And Benthic Impacts From Quadrupling Production.

Under the Hawaii Environmental Policy Act, an environmental impact “statement shall be required if the agency finds that the proposed action *may* have a significant effect on the environment.”¹⁷ (Emphasis added.) Despite this low threshold, a draft environmental assessment for the expansion of HF was deemed to be the appropriate document, because “a finding of no significant impact is anticipated.”¹⁸ This anticipated outcome is conclusory and neglects the strong possibility that a quadrupling of fish production, wherein wastes are still not contained, “may have a significant effect on the environment.”¹⁹ This section outlines the significant impacts that may occur with this project, and given that the low threshold requirement is exceeded, an environmental impact assessment is surely needed for this proposed expansion.

The DEA concludes that because the farm’s maximum fish densities will likely remain largely the same, the quadrupling of fish production will have an “insignificant” impact on the water column and substrate under each cage. This flawed logic fails to appreciate the sheer magnitude of quantity of pollution; the agency merely focuses on density. The two must be considered in conjunction in order to better assess the true impacts of pollution.

Further, it is not enough for the project to look at fish density. The impacts of aquaculture facilities are highly variable and location specific. “The effects of effluents resulting from cage and other forms of aquaculture activities depend primarily on the annual fish production, production area and depth...and water resistance time... [T]he environmental effects...are also site specific and depend largely on the prevailing physico-chemical and biological features of the receiving environment.”²⁰ Without such an analysis, the DEA’s analysis is, at best, incomplete.

The DEA applies the same flawed assumption that the “mixing” ability of the open ocean will effectively wash away the wastes that the project itself removes. Acknowledging that the cages accumulate algae and other marine growth that impairs the free flow of seawater through the netting, HF uses divers to spray a heavy jet of water to “dislodge [the] material” approximately every 2 months. Without any analysis, the DEA reads: “Pulverized material is readily dispersed by the currents and assimilated and

¹⁷ HRS §343-5 (b)(1)(D)

¹⁸ HRS §343-5 (b)(1)

¹⁹ HRS, *supra* note 17.

²⁰ See e.g., Islam, *supra* note 3.

recycled by the ocean environment.” There is no information on the quantity of accumulated matter that is washed off, its composition, or why one would assume that it would have no impacts and simply be assimilated by the ocean.

In fact, on p. 37 of the DEA, it contradicts its previous “assimilation and no impact” argument by stating that the pulverized material actually *helps* maintain the local ecosystem. Of course, notwithstanding the contradiction, this statement neglects the fact that excess nutrient-spurred algal blooms, like the ones that attach to the sea cages, are commonly known to absorb massive amounts of oxygen when they sink to the sea floor, and create the feared hypoxic “dead zones.”

In section 5.3.2 (beginning on p. 29), the DEA displays a series of highly technical and impressive-looking charts to demonstrate the quality of the water and the benthic community. A SCUBA diver conducted a visual survey of the ocean bottom of the proposed expansion area (photo shown in Fig 14). However, no further analysis is taken – the conclusion is literally that because it looks the same as the current barren sea floor, it must be the same.

In reality, the project has had problems from its start. Originally, the Hawaii Pacific University’s Ocean Institute had found that worms associated with fecal pollution had appeared “rapidly” and “became much more abundant under the net cage.”²¹

And while the DEA reports a change in the polychaete species composition beneath the sea cages, and attributes this to the presence of organic enrichment of the sediments, it states that “they do not have great ecological significance” simply because similar changes in composition can also occur from other sources, and not just sea cages. It also claims when the sea cages are empty for six months straight, the DEA alleges that the sea floor returns to its previous state, and concludes that there are no long-term impacts on ecosystem health.

The applicant’s conclusion that there would be no long-term effects could not be further from the truth. A study in 2006 revealed that the facility had “grossly polluted” the seafloor and “severely depressed” certain types of sealife.²² The authors conclude that the changes in benthic infauna over the course of the study follows a typical pattern for organic enrichment of sediments, as the site under the sea cages evolved into a highly polluted site and the site 80 meters down-current followed, indicating that the benthic effects had spread well beyond the physical footprint of the sea cages. Notwithstanding the “open water” location of sea cages and robust longshore current, substantial alteration of the benthic environment resulted from commercial marine aquaculture operations.²³

²¹ Ostrowski, Anthony C. et al. “Hawaii Offshore Aquaculture Research Project (HOARP) – Phase II. Final Report.” NOAA Sea Grant Award No. NA86RG0041, Ocean Institute, Waiamanalo, HI, Aug 31, 2001.

²² Lee, Han W. “Temporal changes in the polychaete infaunal community surrounding a Hawaiian mariculture operation.” *Marine Ecology Progress Series*, 307:175-185, January 2006.

²³ Sustainable Marine Aquaculture: Fulfilling the Promise; Managing the Risks. Report of the Marine Aquaculture Task Force, January 2007, at 74.

These findings directly refute claims that there are no impacts from the waste and excessive nutrients, and that the open ocean waters simply wash all the filth away.

Instead of just snapping photos of the sea floor and then drawing specious conclusions, HF should employ state-of-the-art, water-quality modeling. Other fish farms already implement water quality models to better predict the impacts that pollution will have on the marine environment. The proposed Hubbs-Sea World project in San Diego had an AquaModel simulation prepared in order to analyze the water and sediment effects of fish mariculture at the proposed project.

Further, even more recent and accurate models are now available for HF's use. Researchers of the SUNTANS (Stanford Unstructured Nonhydrostatic Terrain-following Adaptive Navier-Stokes Simulator) project have found that waste plumes from fish farms retain coherence and maintain high concentrations over much longer distances than was previously believed. The SUNTANS model highlights the importance of wake vortex dynamics created by a given array on the concentration and coherence of waste plumes discharged by aquaculture operations.²⁴ The SUNTANS Model predicts a different waste plume behavior under the oscillatory flow conditions than the Gaussian plume dispersal predictions employed in AquaModel simulations. In short, the SUNTANS Model reveals that waste from fish farms can spread farther, and in higher concentrations than was previously believed.

HF should certainly take advantage of the opportunity to use the SUNTAN model to analyze pollution effects of the proposed expansion.

The DEA's Analysis of HF's Escaped Fish Is Inadequate.

The DEA states that "to date, there has been no known escape of fish from HF cages over the seven years of commercial operation." This analysis is highly inadequate. It is commonly known in the industry that escape rates tend to average around 5%. Over seven years of commercial operation, thousands of fish are likely to have escaped. To not be aware, then, of a single moi escaping, suggests nonexistent monitoring.

Perhaps worse, HF argues that even if a fish did escape, it is only helping with the state's restocking efforts. HF places the bulk of its argument in the fact that the moi are derived from local, wild stock. The DEA states genetic mapping of the species reveals that all are from the same genetic stock. While HF states that the initial broodstock is sourced from wild populations, these farmed populations are only replenished annually through capturing 100 juvenile and adult fish as the broodstock.

However, even escaped native fish can do great harm. "Escaped farmed fish can negatively impact the environment and wild populations of fish whether they are native or exotic to the area in which they are farmed, and the probability of significant

²⁴ Venayagamoorthy, S. K., Fringer, O. B., Koseff, J. R., Chiu, A. and Naylor, R. L. 2008. "Numerical modeling of aquaculture dissolved waste transport in a coastal embayment," submitted.

ecological impact increases as the number of escaped individuals increases.”²⁵ For example, extensive research shows that the escape of farmed fish into the ecosystem can result in competition for food and space and predation on native species.²⁶ Other scientific literature indicates there are harmful effects that result from the escapement of farm-raised fish, even if they are native, if, due to inadvertent selection by the novel environment (e.g., reduced fright response, disease resistance, and altered aggressive behaviors), they are not adaptive in the wild.²⁷ For example, a recent 2007 Oregon State University study published in the journal *Science*, demonstrated that the reproductive success of steelhead trout could drop by close to 40 percent per captive-reared generation.²⁸

These are but some of the problems that prompted The Marine Aquaculture Task Force, a consensus group made up of scientists, industry representatives, and conservation organizations, to conclude that “there are significant risks to ecosystems through escapes from aquaculture and that management measures should be taken to eliminate or minimize those risks.”²⁹

The DEA Fails To Assess The Impact Of The HF Project On Forage Fish Populations.

The DEA describes the method of feeding in great detail yet provides very little information on feed composition. One of the most important characteristics regarding evaluation of an operation’s sustainability – its wild fish feed to farmed fish ratio – is completely ignored. Most carnivorous finfish raised in offshore fish farms require, on average, anywhere from 2-6 pounds of wild fish (either in the form of fishmeal or fish oil) to feed one pound of farmed fish. Processing such large quantities of forage fish into pellet form and then feeding them again to farmed fish is the epitome of unsustainable, and actually exacerbates the overfishing problem. The DEA states that the “pellets are mixture of fish meal, agriculture grains, and a vitamin/mineral mix, with a crude protein content of 43%.” No information is given on the actual percentage of fishmeal or fish oil used, nor what kind of fish is used to feed to the Hawaiian moi, nor where the forage fish are sourced. More information is needed about the statewide (or nationwide) impacts of using wild forage fish for feed, because of the environmental effects of removing this critical link from the food chain.

The DEA Fails To Assess The Potential Disease Impacts From The HF Project.

²⁵ See e.g., Miranda, I.T. & Peet, C. 2008. “Seafood Watch Seafood Report: Farmed Yellowtail.”

²⁶ Marine Aquaculture Task Force, *supra* note 8 (citing Gross, M.R. 1998); One species with two biologies: Atlantic salmon (*Salmo salar*) *Aquatic Sciences* 55(Suppl. 1):131–144

²⁷ National Research Council, *Genetic Status of Atlantic Salmon in Maine: Interim Report*, 2002 at pp. 20-21. at p. 21.

²⁸ Oregon State University (2007, October 5). Salmon And Trout Hatcheries Cause 'Stunning' Loss Of Reproduction. *Science Daily*. Retrieved January 8, 2008, from <http://www.sciencedaily.com/releases/2007/10/071004143128.htm>.

²⁹ Sustainable Marine Aquaculture, *supra* note 23, at 49.

Merely noting that “HF is striving to be a leader in marine finfish biosecurity,” and is “diligent in applying best management practices” is entirely insufficient. The DEA is supposed to evaluate the potential impacts of the transfer of disease from farmed moi to wild fish populations, and the drafters appear to not have taken this section seriously.

In Chile, for example, the salmon farming industry experienced a catastrophic decline in product output, due to various diseases ravaging most of the farmed fish in the region. Wild stock also suffered from these outbreaks. A study by L. Neil Frazer, from the University of Hawaii at Manoa, noted that: “Sea lice epidemics, together with recently documented population-level declines of wild salmon in areas of sea-cage farming are a reminder that sea-cage aquaculture is fundamentally different from terrestrial animal culture... a sea cage... becomes an unintended pathogen factory.”

The DEA only covers the procedures adopted by HF for monitoring, which appear to be little more than an explanation of standard industry practice. It does not evaluate the likelihood of outbreaks. Yet even this reveals areas of concern, for after the moi are placed into the pens, HF waits a full four months before testing for diseases.

The DEA Fails To Assess Reasonable Alternatives.

The evaluation of alternatives section is appalling. It first evaluates the option of stocking the moi in even higher densities, and then declines doing so, not based on the obvious environmental implications, but because of reduction in value of fish because of discrepancies in fish size and excessive stress. It rejects searching for other areas outside of the leasing vicinity, but for some reason, it limits itself to water. Why does it not consider land-based alternatives, particularly recirculating aquaculture systems, where untreated discharge is not emitted into the waterways? Several such facilities are in commercial operation on the mainland, and sustainable operations currently exist in Hawaii.

The “no action alternative” argues that if it does not expand its operations by quadrupling output, then moi production for the local market would continue to be “inadequate.” The DEA does not state what the current demand is, and whether HF is exceeding that demand. It states that there would be no increase in employment, but the speculative increase of fourteen people is underwhelming, particularly given that there is no promise to keep additional staff after the transition period is over. Oddly enough, the DEA notes that not expanding would suppress “opportunities to further refine sustainable open ocean aquaculture technologies for Hawaii,” but given the unsustainable nature of such operations to begin with, it seems clear that the appropriate avenue for experimentation would be small-scale scientific projects, and not a “wait-and-see” approach of quadrupling production.

The DEA Fails To Adequately Assess Endangered Species Concerns.

Under HI ST § 195D-4(a), “[a]ny species of aquatic life, wildlife, or land plant that has been determined to be an endangered species pursuant to the Endangered Species

Act shall be deemed to be an endangered species under this chapter and any indigenous species of aquatic life, wildlife, or land plant that has been determined to be a threatened species pursuant to the Endangered Species Act shall be deemed to be a threatened species under this chapter.” Given the many federally-protected endangered species seen at the site, as noted in the DEA, there are consultation requirements “if the applicant has reason to believe that an endangered species or a threatened species may be present in the area affected by his project and that implementation of such action will likely affect such species.”³⁰ The state laws require virtually identical consultation requirements.

Moreover, Hawaii’s Department of Land and Natural Resources must consult with the state’s endangered species recovery committee before authorizing any incidental take permits, and only after following the stringent criteria outlined in HI ST 195D-4(g). Additionally, and particularly given the eyewitness accounts of numerous federally-protected species in the area, the DLNR should “work cooperatively with federal agencies in concurrently processing habitat conservation plans, safe harbor agreements, and incidental take licenses pursuant to the Endangered Species Act.”³¹ This may include consultation requirements with NOAA. In addition, The Marine Mammal Protection Act requires consultation to determine the effects that activities will have in the killing, injury, or harassment of marine mammals – also witnessed in the area.

The DEA remains entirely silent as to whether any of these consultations or analyses were done; instead, it appears that the extent of the DEA’s inadequate analysis is that HF employees saw some endangered species swim by, and noticed that they did not get tangled in the sea cages.

The DEA Fails To Adequately Assess Economic Impacts.

HF argues that it will impact the Hawaii economy by increasing employment opportunities, benefiting local support industries, and increasing opportunities for Federal research dollars. HF argues that if this increased expansion is not approved, then another company will receive federal taxpayer support and Hawaiians will all suffer. HF and its predecessor have already relied heavily upon \$1.5 million in direct or indirect support from NOAA. When in its first year of operation, the experiment with moi was “sub-economic” and would need to triple production to be economically viable.³² Given the substantial economic help in the past, it needs to be asked whether this operation is truly financially sustainable, or would Hawaiian residents be forced to subsidize the private operations once the federal money stops.

HF currently employs eleven people, and hopes to hire fourteen more people with the expansion. The increase of fourteen additional people hired statewide is insignificant, particularly given that there is no promise to keep these staff beyond the transition period.

³⁰ ESA, 16 § 1535(a)(3)

³¹ HI ST § 195D-4(i).

³² Food & Water Watch. *Fishy Farms*, pp. 11-12.

Perhaps worse, the DEA provides no analysis of how this project's expansion might impact commercial fishermen. For example, the project seemingly bars all non-small- recreational fishermen, especially those who wish to anchor, from accessing the 61-acre expanse. The DEA does not analyze the impacts that this will cause to fishermen as fish aggregate around the HF project, instead of favorite fishing grounds.

Further, the DEA fails to analyze the impacts of the HF expansion on fish prices, as a large amount of farmed moi will be dumped into the market, potentially driving down prices.

The DEA Fails To Adequately Assess The Project's Historic and Cultural Resources Impacts.

The DEA's evaluation of the potential impacts the expansion would have on cultural practices and resources is woefully inadequate. In neglect of the importance of the ocean to Hawaiian native populations, along with the Hawaiian Constitution's call to protect natives' rights,³³ the report "confirms" that "...the open ocean site does not contain any known historic resources or traditional and culturally important sites[.]" through a "a recent interview with a knowledgeable Hawaiian fisher," and meetings with the EWA Beach Neighborhood Board. Talking to a non-indigenous Hawaiian fisherman about cultural impacts to indigenous peoples is not sufficient.

Further, the DEA mentions that sand bar sharks are regularly seen around the cages, and that tiger sharks are occasionally spotted. So far, HF reports no problems with the sharks. But given that Kona Blue Water Farms, a fish farm often cited in this DEA, recently killed a tiger shark that regularly appeared around its facility, it must be asked what does HF plan to do if a particular shark becomes persistently attracted to the moi. After all, sharks are revered in Hawaiian cultural lore as an *aumakua*, a family guiding spirit or totem, so this would certainly raise cultural sensitivity issues.

The DEA Inappropriately Inflates The Project's Benefits.

Finally, we must look at the facility's potential benefits, as touted on page 8 of the DEA. The project cannot continue to "demonstrate that commercial open ocean fish farming can be carried out in an environmentally sound, economically viable manner," when so many elements of the operation are unsustainable, and it is so heavily reliant upon federal subsidies. The purported employment benefits, as addressed above, are insignificant; worse, there is the possibility that the proposed expansion could drive Hawaiian fishermen out of business and create a statewide net loss of jobs.

Further, the DEA fails to demonstrate that local purchasing of equipment and supplies will increase, because it fails to show that HF currently sources its supplies

³³ Article XII, Section 7 of the Constitution of the State of Hawaii reads: "The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a's tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights."

locally. It is known that the sea cages are manufactured in Washington, so the addition of cages will not benefit for local manufacturers. While Mr. Cates will indeed be supplying more moi to resident and tourist markets, there is no indication that there is a demand for fish that is not being met by existing wild fish populations.

Conclusion

The DEA fails to provide adequate information about the new installation of sea cages, the source and components of the massive amount of feed that will be purchased and discharged into the ocean, the untreated waste, or the true impacts on the ecosystem and marine animals. It also fails to prove that the environmental or cultural impacts can be mitigated. FWW urges DLNR to adopt the precautionary approach, reject this DEA, and to conduct a full-scale environmental impact statement, taking into consideration cumulative impacts and true evaluation of alternatives, and to not move forward with HF's proposed expansion at this time.

Sincerely,



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HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Ms. Marianne Cufone
Director, Fish Program
Food and Water Watch
1616 P. St. NW, Suite 300
Washington, DC 20036

Dear Ms. Cufone:

Thank you for your review of the Draft Environmental Assessment (DEA) for the expansion of Hukilau Foods LLC (HF) State ocean lease. The carefully chosen HF site has been in commercial production of the native fish species moi, for over seven years, without any significant issues arising with Federal or State agencies, native Hawaiians and the general public. Moreover, the Company has well over 2000 days of observations at the existing and proposed expansion site on which to base its statements.

HF believes the majority of your issues and concerns are adequately addressed in the Conservation District Use Application (CDUA) and the DEA. We provide the following comments, clarifications and document highlights for your further consideration, more or less in the order they are presented in your letter.

Overarching Concerns with Open Ocean Aquaculture

You make a host of general comments and criticisms of open ocean aquaculture, which we briefly address with the following general responses.

a. HF agrees open ocean fish farms do generate waste nutrients, as do all controlled animal production situations. However, generally the tropical open ocean's high current, well mixed, low nutrient background environment has demonstrated in Hawaii and elsewhere its physical and ecological capability of dispersing, assimilating, and recycling the fish nutrients; returning them to the food web. This is not unlike natural processes of nutrient recycling. Moreover, equating the assimilation capacity of temperate climate, sheltered water cage systems with those of exposed, open ocean cage systems is inappropriate and not comparable.

b. You present speculative research conclusions concerning mercury accumulation in wild salmon from one study and note escaped fish from farms are a general concern. Our understanding of the recent scientific literature is the mercury scare headlines with salmon feeds and farmed fish flesh has been corrected with larger, more statistically valid sample sizes and this research has shown levels are below actionable values.

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Further, escapes are an individual farm management issue and have not occurred with HF's moi.

c. HF understands the general concern that over use of antibiotics in our society can lead to development of harmful resistant strains of bacteria. HF does not use antibiotics in its feed.

d. The debate over the growing use of fish meal and fish oil for commercial aquaculture production will continue as the industry moves to expand and competition for feed stock among livestock sectors expands. Notably, the industry and its aquaculture proponents are directing major research and development efforts towards reducing the use of fish meal and oil by improving feed conversion, reducing wastage and identifying non-fish meal protein and fat sources to use as substitutes. The efforts for salmon have achieved great results in the last decade and improvements in other farmed species should follow.

e. HF strongly believes that the U.S. aquaculture and fisheries industries can co-exist and continue to be two sustainable domestic sources of seafood for the American consuming public, reducing the seafood trade deficit. Both industries generate significant jobs and revenue through the production, distribution and sale of products. Moreover, there are an increasing number of examples of aquaculture-enhanced fisheries, as well as fishers becoming aquaculture farmers, e.g., Northern Florida.

Overview of the Proposed Expansion

You discuss a brief overview of the HF expansion plan and HF comments as follows:

You compare fish waste from a fully stocked moi farm with the amount of untreated sewage generated by the city of Boston, but offer no data. HF notes that comparing cold blooded fish waste to human sewage is inappropriate, due to the human health implications of sewage. Wild and cultured fish waste is naturally recycled constantly and rates depend on the site assimilation capacity-the tropical oceans being the highest.

We note that should the phased production reach its target level of 5 million pounds in three years: the standing stock biomass will consist of fish at all life stages (juvenile to market sized, thus limiting biomass) and be required to meet the State Department of Health, NPDES/ZOM permit requirements. Further, massive amounts of water flow through the cages hourly to disperse and aid assimilation into the food web, for example at a speed of ½ kt., a single 3000 m³ cage will have 384 million gallons of seawater flow through it.

Food and Water Watch (FWW) restates HF operational details, apparently as matters of concern, but without detail. As stated, HF has operated for over seven years at its existing site without incident or issue. HF is not aware of any "dead zone" or a Barbers Point Sanctuary in Mamala Bay. The farm has had no impact on the directly

shoreward coral reef (shown by previous sampling) due to current patterns. The distant dumping site has had no impact on the farm.

The formal restriction on no anchoring of boats - boats may transit over the cages at will- is requested because of public safety (water is too deep for recreational diving), staff safety, operational (don't want anchors dropped on cages or the mooring system) and insurance liability concerns. Lastly, we note the portion of the highly secure mooring system that contacts the substrate covers just 0.025 acres of the 61 acres requested.

Comments

a. Cumulative Impacts

HF finds your comments on cumulative impact of the proposed farm expansion as largely unsupported and inappropriate for consideration in the DEA. Larger questions of impacts of non-point source pollution of Mamala Bay by urban Honolulu are beyond the scope of this specific site expansion proposal. Seven years of operation and monitoring data has demonstrated no significant impacts, while meeting water quality standards. Furthermore, calling for comment on regional water quality impacts of two existing farms and several potential farms on another, distant island, is un-necessary and inappropriate.

b. Water Quality and Benthic Impacts

HF believes the CDUA and DEA adequately address all the required water quality and benthic topics and issues and an EIS is not required to expand the project. HF comments on your impact concerns follow:

- HF stands by its analysis and conclusion that the impacts of the expanded project should remain insignificant and the Company should be able to secure an appropriate NPDES/ZOM permit and meet State receiving water standards, as it has for seven years. Monitoring of the existing operation described in the DEA demonstrates increases over ambient water quality values are difficult to detect due to the short residence time of the ocean water in the cage (very high flow rates), large volumes (millions of gallons) of ocean water available for mixing, and high assimilative capacity of the nutrient poor, Oligotrophic Hawaii ocean environment. Moreover, these conditions will apply to the expanded production (same stock densities as existing farm) and production area (larger area) and dispersion and assimilation will be enhanced further by the re-alignment of the layout to increase turbulent mixing.
- HF utilizes no chemicals to clean its cages. Experience indicates cleaning cages as described on a 2 month rotation keeps biofouling to a minimum. Experience further indicates the limited amounts of pulverized material are readily dispersed by currents and are assimilated and re-enter the food web. The benthic monitoring results support this statement.

- HF considers the balanced cage ecosystem that develops and is partially supported by cage feeding and cleaning a positive impact not unlike artificial reefs or FADs deployed by the State.
- HF did a visual diver survey of the expansion area and included a representative photo of the bottom in the DEA. HF believes, considering the uniformity of the ocean bottom in Mamala Bay, that our statements are valid. Further, before the required benthic monitoring occurs in the expanded area, baseline data will be collected.
- HF stands by the statement that the shifts in polychaete species under the cages to more opportunistic species are not ecologically significant and regulatory agencies have agreed. The plasticity of the species composition and the tendency to return to a control site species composition when cages were empty for several months, was determined by the University of Hawaii and cited in the DEA. It is a common occurrence around the Islands that after rain events and the subsequent non-point source discharge, polychaete species composition and abundance shifts to opportunistic species.
- HF does not feel modeling of water quality impacts is necessary at this time. The Company is familiar with both the AquaModel and to a lesser extent the Stanford model. Our understanding is the Stanford model was an experimental computer simulation with not field validation. The AquaModel work with the Hubbs Sea World project strongly supports the statements and conclusions concerning ocean mixing and recycling in the DEA.

c. Escaped Fish

HF reiterates there have been no known escapes of fish from its cages. This in part can be attributed to the high degree of professionalism of the HF staff and their daily presence on site. It can be also attributed to moi being afraid of the divers when they enter the cage. Further, HF reiterates that the moi stocked, a native species, are genetically the same as wild stock. Finally, it is apparent that HF management measures have eliminated escapes as an issue.

d. Forage Fish Populations

HF reiterates that the feed conversion ratio for moi is 2 lbs. feed to 1 lb. of moi, which is acceptable for a relatively new aquaculture species (see also earlier comments on the fish meal issue and aquaculture). Feed is purchased from Skretting, a large and well respected feed manufacturer. The Company has a documented policy that states, "Skretting will only source fish meal and fish oil from fisheries that are regulated and monitored as being sustainable."

e. Disease

HF reiterates that the Company is diligent in applying best management practices to its operations; including inspection of fingerlings for disease prior to stocking, maintaining controlled feeding rates, utilizing acceptable stocking densities and regularly removing of fish mortalities and cage cleaning. Its new hatchery plans to adopt biosecurity procedures utilized at large European facilities; including highly controlled movement of staff and visitors. Finally, plans are to continue to test fish at three stages in the growout process and divers will be observing fish condition daily.

FWW comments concerning salmon are not relevant to this project.

f. Reasonable Alternatives

HF stands by the detailed evaluation of alternatives as adequate and reasonable. The goal for Hawaii open ocean aquaculture for all concerned is plan and implement an environmentally and economically sustainable project. Large-scale, land-based culture of marine species is in the early stages of technology development and marine recirculating systems are developmental and not a viable option, and don't warrant evaluation.

Seafood market information and moi market information are presented under Economic Characteristics. FWW denigrates the increased hiring of fourteen people, for a total staff of 25, and shows a gross ignorance and insensitivity to the Hawaii economy and its employment needs. Fully 85 % of companies in Hawaii employ 9 or fewer people and jobs at HF are exactly the high wage and high tech positions the State is encouraging. Further, it is well known that the nature of technology development is continuous improvement.

g. Endangered Species

HF stated in the DEA the farm has 10 years of observation and rare, threatened and endangered marine mammal species are rarely seen in the vicinity and have never been observed at the site. The exception is green sea turtles, which are seen two or three times a year, at the site. Turtles are transient and are not affected by farm activities. An incidental taking permit will not be needed due to the lack of species presence.

h. Economics Impacts

FWW misinterprets and misrepresents statements in the DEA regarding the economic impacts of the expanded project. The DEA states the expansion will impact the Hawaii economy many ways, including through increases in: employment opportunities, product availability in the local marketplace, expenditures in the local support industries, and opportunities for Federal research dollars. The Company will invest up to \$13 million from a combination of private funds and a Federal fisheries loan,

which must be paid back. The research project mentioned in the DEA, demonstrated technical feasibility and private investment flowed in to expand to successful commercial scale; following a routine economic development model.

Regarding the employment comment, see HF's earlier comments about FWW's lack of understanding of the Hawaii economy. We highlight that the CDUA and DEA adequately describe the local seafood industry supply (80% imported) and demand (50 million lbs. a year) and the annual supply of moi from fishers has averaged only 700 lbs. a year.

As described, HF is requesting limiting access to the lease area by restricting anchoring of boats. Trolling and drift fishing and transit of boats over the submerged cages will continue with the expanded operation. HF reiterates after seven years of operations no access issues have been raised by agencies or the public.

The anticipated impact of new supply on the price of moi is it will go down. HF has stated it will fill the demand for moi in Hawaii, before exporting and has excellent community support for this approach (see DEA).

i. Historical and Cultural Resources

HF has conducted a Cultural Resources Assessment that concludes there are no Hawaiian cultural resource issues associated with the expanded site. This conclusion was developed from the following input: 1) There have been no complaints in 10 years of operation; 2) HF sought council of a highly knowledgeable, Leeward side, Hawaiian cultural practitioner, activist and fisher, who would be aware of any issues; 3) HF met with the Ewa Beach Neighborhood Board for input; and ,4)HF met with the Office of Hawaiian Affairs (OHA), the leading Hawaiian organization in the State, for input. We note OHA has established a policy to encourage native Hawaiians to become involved to the fullest and highest extent possible in offshore fish farming.

The Company is fully aware of the cultural significance of sharks to the Hawaiian people. Sharks have not been an issue to date and HF will continue to treat the animals with appropriate respect and use non-lethal means of management should they become an issue.

j. Project Benefits

HF disagrees and reiterates the CDUA and DEA clearly support the conclusion that the expanded project is environmentally and economically sustainable. The project is receiving no Federal or State subsidies (See also earlier comments on FWW inaccurate comments on employment and fishing). Purchasing of supplies currently occurs locally and will continue to occur locally as the project expands. Special equipment will be sourced from out-of-state, if not available in-state, as is normal for Hawaii businesses. HF reiterates that Hawaii imports over 80% of its seafood and the moi fishery produces only 700 lbs. a year, so demand for this Island favorite is clearly there, as shown in the DEA project support letters.

k. Conclusion

As stated previously, HF has submitted a comprehensive DEA that addresses the required information for government agencies and the public to make informed decisions about the proposed project. An EIS is not required and would add nothing substantive to the permit process. Concerns raised by FWW have been shown to be inaccurate or inappropriate for Hawaii or adequately covered in the CDUA and DEA, however they will be duly considered in preparation of the final document.

We appreciate your participation in the environmental review.

Sincerely,

A handwritten signature in cursive script, appearing to read "John R. Cates".

John R. Cates
President

Kanaka Council Moku O Keawe

HC 2 Box 9607
Keaau, HI 96749
Ph. 808-982-9020
Email:moku_okeawe@yahoo.com

Testimony submitted by: Kale Gumapac, Alaka'i

Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813
Ph. 586-4185
Fax. 586-4186

Grove Farm Fish and Poi LLC
dba Hukilau Foods LLC
P. O. Box 335
Kailua, Hawaii 96734
Contact: Randy Cates
Phone: 808-841-4956
Email: rcates@hukilaufoods.com

Aquaculture Planning & Advocacy LLC
c/o Hukilau Foods
P.O. Box 335
Kailua, Hawaii 96734
Contact: John Corbin
Phone: 808-239-8316
Email: jscorbin@aol.com

Department of Land and Natural Resources
Office of Conservation and Coastal Lands
1151 Punchbowl Street,
Honolulu, HI 96813.
Contact: Chair Laura Thielen
Tel: 587-0377
Fax: (808) 587-0322 or via e-mail at dlnr.occl@hawaii.gov

Re: COMMENTS ON DEA for the Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu, Hawaii

(Declarations of Rights – 1840- by King Kamehameha III - Kingdom of Hawaii Constitution)

“God hath made of one blood all nations of men to dwell on the earth,” in unity and blessedness.

God has also bestowed certain rights alike on all men and all chiefs, and all people of all lands. These are some of the rights which He has given alike to every man and every chief of correct deportment; life, limb, liberty, freedom from oppression; the earnings of his hands and the productions of his mind, not however to those who act in violation of laws.

God has also established government, and rule for the purpose of peace; but in making laws for the nation it is by no means proper to enact laws for the protection of the rulers only, without also providing protection for their subject; neither is it proper to enact laws to enrich the chiefs only, without regard to enriching their subjects also, and hereafter there shall by no means be any laws enacted which are at variance with what is above expressed, neither shall any tax be assessed, nor any service or labor required of any man, in a manner which is at variance with the above sentiments.”

(1852- Art.I – Declared by King Kamehameha III of the Kingdom of Hawaii Constitution)

“God hath created all men free and equal, and endowed them with certain inalienable rights, among which are life, and liberty, the right of acquiring, possessing, and protecting property, and of pursuing and obtaining safety and happiness.”

History shows that the rights of its people were protected by the Declaration of Rights of 1840 and again in 1852 by the Kingdom of Hawaii. It declared protection of their rights to both the Chiefly and native Tenant classes. These rights were not limited to the land, but included the right to "...life, limb, liberty, freedom from oppression; the earnings of his hands and the productions of his mind, not however to those who act in violation of the laws."

The Kanaka Council believes that throughout the history of the Hawaiian Kingdom these rights have not diminished and even the STATE OF HAWAII has a fiduciary obligation to protect all rights as stated under Article XII, Section 7 of the Constitution of the STATE OF HAWAII and House Bill 2895 Section 1 – ‘A Bill for an Act – Relating to Environmental Impact Statements.’”

Article XII, Section 7. The State reaffirms and shall protect all rights, customarily and traditionally exercised for subsistence, cultural and religious purposes and possessed by ahupua'a tenants who are descendants of native Hawaiians who inhabited the Hawaiian Islands prior to 1778, subject to the right of the State to regulate such rights. [Add Const Con 1978 and election Nov 7, 1978]

In reviewing the Draft Environmental Assessment (DEA) there are substantial concerns that are not being addressed. We find that the current DEA is not addressing all rights,

culturally, religiously, customarily and traditionally, exercised by ahupua'a tenants who are descendants of the original land owners who inhabited these islands of Hawai'i prior to 1778.

The following issues not being addressed in the EA are violations of the vested rights of the native tenants as recognized by the Kumulipo, Constitution of 1840, Kingdom of Hawai'i, and continued to be recognized by the Constitution of the State of Hawai'i in Article XII, Sec. 7. The Kanaka Council finds the DEA inadequate in relation to cultural, customary, traditional and religious rights and would like to have the following questions addressed and answered before the DEA is approved.

1. How extensive was your search for Lineal heirs of the land, ocean and traditional, cultural, religious practitioners?
2. Where in the DEA does it show that State of Hawai'i has clear title to these ocean lands?
3. Where is the list of heirs belonging to these ocean lands of the project site?
4. Who was the consulting "Konohiki"?
5. Why was the native Hawaiian community input limited in scope?
6. What is your definition of cultural practitioner?
7. What is the psychological impact to the Kanaka Maoli?
8. Who made the determination that "Konohiki Fishing Rights" do not exist in the project area?
9. What other areas around kapae aina where Konohiki Fishing Rights do not exist?
10. Does the proposed project comply with the laws of the Kumulipo? If "yes" how? If "no" why not?
11. Who made the determination that fishing ko'a didn't exist in the project area?
12. How was that determination made?
13. How will the wild fish population be affected by this project?
14. What steps will be taken to protect the religious rights of the Kanaka Maoli?
15. What habitat and nesting areas will be destroyed?
16. What ecosystem is created by this project?
17. Why does the cultural assessment in the EA not address the po'e kanaka of today?
18. When will it be corrected?
19. Should native resources prior Western contact be protected?
20. How many islands have existing ko'a grounds? Is there a need to protect it for the future?
21. What laws are written to protect endangered fish and sealife in Hawaii?
22. There is a lack of native Hawaiian input concerning the cultural assessment and psychological impact. Only one Kanaka Maoli gave input in the DEA. When will native input be taken?
23. How will the Kanaka Maoli benefit from this project?
24. Why should ceded lands belonging to the Hawaiian people be leased to this project? Is a ceded lands lease legal?
25. What gives a private corporation the right to create this type of project in the Kingdom of Hawai'i?
26. What Ahupuaa is in the project area?
27. What is meant by "sustainability"?

28. Why is it necessary for the project to provide fish for the rest of the world? Is that being sustainable?
29. Please explain why it's necessary for Hawai'i to suffer the negative environmental effects of increased pollution on the people and ocean in order for us to feed foreign investors?
30. Is the project area under a Royal Patent? Has clear title been established?
31. What is the impact to the wild fish population when fish escape from the cages?
32. When will a cumulative impact study be completed on present and future impact of the project?
33. What guarantees will be given that the fish meal from other countries will not be contaminated and will not wipe out their fish resources to manufacture the fish meal?
34. Is there any violation in cultural assessment that contradicts Article 12 Section 7 of the State Constitution?
35. What is the parameter of the project site?
36. How does a biologist do a cultural assessment?
37. What is the county responsibility to the protection of the ocean resource and clean water?
38. What is the role of the State of Hawai'i to protect the ocean resource and clean water?
39. What pollution problems will be caused by this project?
40. What is the estimated hazards of the project?
41. How many applications have been made on this project?
42. Were there other DEA attempted only to have it withdrawn?
43. Who will be responsible for the oversight of this project? Will a Kanaka Maoli entity be contracted? How soon can a site visit be scheduled at the proposed user's expense?
44. How much fish will be reserved for Hawaiian use?
45. Has all pending violations against the parcel or project site been satisfied?
46. Has the previous owner and proposed owner been involved in other fish farm projects? Where? What references do they have?
47. Has there been a public hearing held on the island? If "no" when and where will it be scheduled?
48. What government funding are you receiving for this project? How much? Will you pay it back?
49. Clarify the issues and problems in the past regarding this project and/or type of project.
50. Were fishing and ocean practitioners notified of potential impacts on their gathering rights?
51. What companies will be providing the fish meal? What ties do they have to foreign countries where environmental and conservation laws are non existent?
52. What is Hukilau Foods Offshore Fish Farms' ho'okupu to the Hawaiian people?
53. How do you identify a cultural practitioner of the ocean?
54. Has ancient site assessments been made?
55. What steps are being taken to protect these areas?
56. Have the user done a cultural impact study of the area?
57. Who is the local fish meal source to provide fish food for the project?
58. What credentials do the cultural experts hired by the user have?
59. Are these experts cultural practitioners?
60. Will you extend the deadline on the DEA for us to digest your answers when received and allow comment on the DEA answers to our questions?
61. Has all tax obligations been met for the project site?

62. What is the proposed buffer for traditional gathering rights to fish around the cages?
63. What procedures are in place to guarantee transparency to review documents, reports and audits from the public?

The Draft Environmental Assessment for the proposed HUKILAU FOODS OFFSHORE FISH FARM, MAMALA BAY, OAHU HAWAII fails to provide adequate information and fails to answer critical questions. Your cultural assessment lacks credibility and truth. The Kanaka Council does not recognize the alphabet soup entities used to determine in the DEA to qualify cultural sites and areas. The Kanaka Council Moku O Keawe demands that a full EIS which would include a "Cultural Impact Assessment" be completed before granting any further expansion.

The Kanaka Council believes the State of Hawai'i is obligated to protect all rights as stated under Article XII, Section 7 of the Constitution of the State of Hawai'i. This is not a sustainable practice for Hawaii to export Moi to markets throughout the world. This project will have a negative impact on Hawaii's Kanaka Maoli, kamaaina, malihini and the ocean environment in trying to feed the world. This mentality must stop.

Respectfully Submitted,

Kale Gumapac, Alaka'i
Kanaka Council Moku O Keawe



HUKILAU FOODS
A GROVE FARM COMPANY

Mr. Kale Gumapac, Alaka'i
Kanaka Council Moku O Keawe
HC 2 Box 9607
Keaau, Hawaii 96749

Dear Mr. Gumapac:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the proposed expansion of the Hukilau Foods LLC (HF) State ocean lease two miles off Ewa Beach, Oahu. The carefully chosen site has been in commercial production of the native fish species Moi for over seven years, without any significant issues arising with Federal or State agencies, Native Hawaiians, and the general public. Moreover, the Company has well over 2000 days of observations at the existing and proposed expansion site to base its statements.

You indicate that after review of the DEA that there are substantial concerns and rights not being addressed. You present a list of questions and issues that are the subject of these concerns and indicate the need for these to be addressed and answered before the DEA is approved. HF will address these matters in the numbered order you present them, and provide the following comments, clarifications and document highlights for your further consideration.

1. The Cultural Resources Assessment consisted of: interviewing Mr. William Aila of Waianae, Oahu, a recognized expert on Hawaiian culture and a cultural practitioner, activist and long-time fisher in the area; presentations to the Ewa Beach Neighborhood Board; a limited search of the relevant literature; and meetings with the Office of Hawaiian Affairs. In addition, over the years there were meetings with native Hawaiian cultural practitioners, such as Eric Enos, Charles Maxwell, Kai Kalama, and many other individuals and native Hawaiian groups.
2. It is our understanding, per the Hawaii Revised Statutes (HRS), that the State of Hawaii owns all the Conservation District Lands. All the submerged lands are Ceded Lands and are in the Resource sub-zone. Chapter 190 D, HRS, as amended, allows the State to lease submerged lands.
3. As far as we know, there are no heirs to the ocean lands occupied by the existing and proposed sites, which are two miles offshore.
4. We understand there are no konohiki for this site two miles offshore.
5. We understand it is Hawaiian custom to ask for input from the community in which the project is to be located, which is what HF did for purposes of the cultural assessment. This was in addition to the statewide environmental review of the project, which you are responding to.
6. HF's general understanding is that a Hawaiian cultural practitioner is a person of native Hawaiian heritage that incorporates traditional and cultural values and practices into their life.
7. Evaluation of psychological impacts on Native Hawaiians is beyond the scope of the DEA.

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8. HF consulted with Mr. Aila. Also, Chapter 187 A-23, HRS, states "Konohiki rights consist of fishing grounds from the reefs and where there happens to be no reefs, from the distance of one geographical mile seaward of the beach at low watermark ..." As such the HF site is beyond the traditional boundaries of the konohiki.
9. HF does not understand the specific question; however the project is located beyond the legal definition of konohiki.
10. The project complies with the laws of the State of Hawaii and the United States of America, as required.
11. HF has operated for 10 years at the site without this issue of ko'a arising. Mr. Aila and other input gathered indicate no ko'a are present in the existing and proposed areas.
12. As indicated above, from HF's long experience and Mr. Aila's expertise and knowledge of the South Shore of Oahu.
13. The DEA discusses impacts on the wild fish population in the area and vicinity; including recruitment, stock escapement, and fish aggregating characteristics. Briefly, the farm cage will not have a significant, long-term effect on recruitment to wild populations considering the relative size of the farm and the large expanse of available natural habitat for reproduction and recruitment in Mamala Bay and the South Shore.

As pointed out in the DEA, there has been no known escape of fish from HF cages. Concerns over potential for disease transfer to wild stock are addressed through rigorous stock testing and management procedures described in the DEA, as well as 24/7 site security through remote cameras. Since HF fish are genetically still wild fish, an escape event would be similar to a stock enhancement event regularly conducted by the State.

HF has observed that the existing cage farm has attracted marine life and has created a mini-ecosystem in what was a barren part of the ocean. These cage structures attract a host of benthic invertebrates and algae, as well as benthic, reef and pelagic species of fish, similar to the State managed Fish Aggregation Devices (FADs). Broadly, the HF experience indicates the mini-ecosystem is a positive addition to the ocean and the expanded cage system will become in dynamic balance with the much larger and diverse ocean environment. For more details see DEA.
14. Protection of religious rights is the responsibility of both the Federal government and the State of Hawaii. HF will respect all laws regarding religious rights.
15. Sea birds have never been seen at the HF site. No ocean habitat will be destroyed, but the cage mooring anchoring system will cover 0.025 acres of ocean bottom.
16. Based on HF experiences with the existing farm, the expanded farm will continue to attract organisms and become a larger mini-ecosystem of swimming and attached organisms in balance with

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the ocean environment. It is our experience that this is a positive benefit. See DEA, particularly Appendix 4.

17. The Cultural Resources Assessment addresses the topics relevant to the HF site.
18. HF believes the Cultural Assessment is satisfactory as written, but will consider Kanaka Council's comments in preparing a final EA.
19. HF has no formal opinion on your question. However, HF generally believes that protection of cultural resources is a matter for Federal and State government. HF will respect cultural resources according to the governing law.
20. This information on statewide ko'a is not required for the Cultural Resources Assessment of the HF site. Please refer this protection question to the appropriate Federal and State agencies.
21. HF refers you to the appropriate sections of the Hawaii Revised Statutes, which are on line.
22. HF believes that the Cultural Assessment has gathered sufficient information to conclude there are no cultural issues with the expansion site, located two miles offshore in 150 ft. to 200 ft. of water.
23. Moi grown at the HF site will benefit Kanaka Maoli in many ways. First and foremost by providing a traditional fish grown locally that is important to their good health. Second, it supports OHA's stated policy for native Hawaiians to be involved to the fullest extent in offshore aquaculture. Third, once again to encourage Kanaka Maoli to utilize the ocean in a sustainable manner to produce food. In addition, HF will continue to supply seed stock to both native Hawaiians and the State for restocking.
24. The State of Hawaii and the State Legislature have deemed it in the public interest and the policy of the State to lease State marine waters for commercial, for-profit open ocean aquaculture. As previously mentioned, all State marine waters are ceded lands and subject to relevant law.
25. See answer to no. 24
26. The nearest Ahupua'a is Honouliuli.
27. There are many acceptable definitions of sustainability on the Internet and elsewhere. HF supports the "Peoples Definition" found in the Hawaii 2050 Sustainability Plan. It states: "A Hawaii that achieves the following:
 - Respects the culture, character and beauty and history of our state's island communities.
 - Strikes a balance between economic, social and community and environmental priorities.
 - Meets the needs of the present without compromising the ability of future generations to meet their own needs."

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28. HF does not believe it needs to provide fish to the rest of the world. It will continue to supply the people of Hawaii first, with quality product. HF will sell its product to other markets to remain economically viable, while still supplying the people of Hawaii with moi.
29. As described in the DEA, we anticipate the HF expanded project will be environmentally and economically sustainable and have no significant impact on the Hawaiian ocean environment. Investment to the project is local.
30. HF has clear ownership of the existing lease and the State has legal authority to grant the expanded lease.
31. There have been no escapes of moi from the HF cages to date. If there was an escape, it would be similar to a stock enhancement event regularly conducted by the State, since HF fish are genetically the same as wild fish.
32. Cumulative impact of the project has been assessed in the DEA.
33. No guarantees of this nature can be given by HF. However, HF notes that its feed supplier, Skretting Co., states that it only sources fish meal and oil from sustainable sources and ingredients are tested for contaminants.
34. No, not to HF's knowledge.
35. If you are referring to the size of the expanded site it will be 61.59 acres.
36. HF does not understand the question. Appropriate persons were contacted and appropriate documents were reviewed to prepare the Cultural Resources Assessment.
37. HF refers you to the Department of Planning and Permitting of the City and County of Honolulu for a detailed response. Briefly, it has no jurisdiction two miles off shore.
38. HF refers you to the Hawaii Revised Statutes and web sites for the Dept. of Agriculture, Dept. of Land and Natural Resources (DLNR) and Dept. of Health (DOH).
39. HF anticipates no problems as described in the DEA. The expanded project will secure a new National Pollution Discharge Elimination System (NPDES) permit and Zone of Mixing (ZOM) and meet State receiving water standards for point source discharges.
40. There are no estimated hazards for the project.
41. This permit application for project expansion is the first.
42. No.

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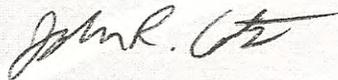
- 60. No. HF will follow the process.
- 61. Yes.
- 62. There is no need for a buffer two miles offshore.
- 63. Required reports to the oversight agencies will be public documents.

In conclusion, HF has provided answers to your questions and refers you to the DEA and Conservation District Use Application (CDUA) for details. We will consider your comments further in making appropriate changes to the DEA. HF does not believe an Environmental Impact Statement (EIS) is required given the detailed DEA that has been prepared.

HF believes the Cultural Resources Assessment is sufficient to define the project's lack of impact on resources and traditional and customary native Hawaiian practices. We note that the Office of Hawaiian Affairs has established a policy to encourage native Hawaiians to become involved to the fullest and highest extent possible in offshore fish farming and HF looks forward to cooperating in that endeavor. Further, the Company reiterates it intends to satisfy local demand before considering exporting.

We appreciate your participation in the environmental review process. You have expressed your thoughts on many important issues which I often discuss with my own family, the Lonokapu's, from Hilo. I would welcome the opportunity to sit down with you one-on-one to discuss my views.

Sincerely,



John R. Cates
President

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22 June 2009

Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl Street
Room 131
Honolulu, HI 96813

RECEIVED
OFFICE OF CONSERVATION
AND COASTAL LANDS

2009 JUN 23 A 7:49

FAX: 808.587.0322

DEPT. OF LAND &
NATURAL RESOURCES
STATE OF HAWAII

Subject: Hukilau Foods (HF) LLC Expansion

As an ocean advocate and a concerned individual your agency must require that Hukilau Foods LLC (HF) complete a full environmental impact statement before they are allowed to expand their operation.

Their draft environmental assessment is deficient in addressing critical issues:

- 1) The location of the project to the two domestic waste outfalls; Sand Island Outfall and Honouliuli Outfall.

What precautions have HF put in place for the event of a massive sewage line break? Knowing that one is about four miles away to the East and the other is about one and a half miles away to the West is not reassuring by any means.

- 2) Fish escapement.

No detailed procedures about how HF would handle fish escapement. Because they have acknowledged, "To date, there has been no known escape of fish from HF cages over the seven years of commercial operation." And, they further state, "Any escape would function as a stock enhancement event similar to the regularly carried out by DLNR." This expresses their lack of concern for the ecology and reckless behavior. Their attitude is deplorable and inexcusable. Human errors are known to happen. HF should practice the Boy Scout's motto: Be prepared!

Their anticipated determination of finding of no significant impact (FONSI) is disingenuous. Increasing the project's area and the increase of fish held in these cages certainly would have an cumulative and significant impact.

Please remember your core mission of managing and protecting its resources. Fish farms are negatively exploiting Hawaii's resources and promotes the continuation of polluting our Class AA waters.

Mahalo,



Gwen Ilaban
76-6182 Alii Drive
Kailua-Kona, HI 96740
808.329.1912



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Ms. Gwen Ilaban
76-6182 Alii Drive
Kailua-Kona, Hawaii 96740

Dear Ms. Ilaban:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the expansion of Hukilau Foods LLC (HF) fish farm. HF believes the DEA provides sufficient description and detail for interested public agencies and the public to understand the expanded project and an Environmental Impact Statement is not required. HF provides the following responses to your other concerns.

- a. As you note, the farm is located between two domestic waste outfalls in Mamala Bay, the Sand Island Outfall about four miles to the East and the Honouliuli Outfall about one-and-a-half miles to the West. In the event of an incident of concern with either outfall, appropriate testing will be carried out to determine if there is any impact on the farm and appropriate action will be taken. HF notes that both the domestic waste outfalls and the fish farm are located in Class A waters, which permit Zones of Mixing.
- b. As HF points out, there have been no known escapes of fish from the cages. HF employs highly experienced divers to tend the cages. Management procedures described in the DEA include 24/7 site security through remote cameras. Since HF fish are genetically still wild fish, an escape event would in fact be similar to a stock enhancement event regularly conducted by the State.

HF has operated commercially for seven years as a good steward of the environment and anticipates continuing to do so with the expansion. We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

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John Corbin
Aquaculture Planning and Advocacy LLC

Randy Cates,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I keep reading about massive over fishing all over the world. Those who consider the oceans catch to be an infinite resource may be somewhat disappointed when they discover it is a finite resource and they have managed to deplete it. Laugh now. Consider the rest of the life in the ocean and not just your profits, otherwise you'll break the food chain and won't be able to repair it. Then where will you be? Nobody ever listens until it's too late and then all they can manage are insignificant patches that never work.

Dave Kisor
45-223 Makahinu St.
611
Kaneohe, HI 96744

951-276-0368



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Dave Kisor
45-223 Makahinu St., #611
Kaneohe, Hawaii 96744

Dear Mr. Kisor:

Thank you for your comment on Hukilau Foods offshore fish farming project expansion. You are very concerned about global over fishing and its impact on the world's oceans, as is Hukilau Foods. You state aquaculture now provides over 40% of aquatic protein worldwide and many experts support the idea that sustainable aquaculture, particularly open ocean fish farming such as the proposed project, will be the major source of seafood in the near future.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

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John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I have significant concerns about the expansion of Hukilau Foods offshore fish farm in Mamala Bay and would like to formally request that an Environmental Impact Statement be prepared.

The expansion of Hukilau foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period. Although this increase would be staggered, the cumulative impacts of the additional biomass are unknown and warrant further study. Additionally, community members - especially Native Hawaiians - should be consulted. This would be most appropriately done by consulting with widely recognized organized Native Hawaiian groups such as the Kanaka Council.

The current DEA fails to sufficiently address the effects of the proposed farm on: wild fish populations; conflicts with marine mammals, endangered species and fishermen; concerns about fish feed; impacts on cultural resources; overall economic impacts on Hawaii and related U.S. markets to which the fish will be exported.

Hawaiian waters are a public resource. Hukilau foods is asking the citizens of Hawaii to allow it to increase its profit by intensifying production in a way that could cause substantial harm to public resources. Whatever impacts Hukilau Foods will have on existing natural resources will be shared by all of us, while profits will be only theirs. Therefore, it is imperative that Hukilau Foods complete a full environmental impact statement before proceeding.

The ocean is not a free or "underutilized" resource. We have yet to understand the complexity of benefits and ecosystem linkages that exist there. We would be far better to invest our resources in recovering traditional Hawaiian fishponds - systems we know produced massive amounts of food, that were tested for hundreds of years and fine tuned to the mauka to makai system they were located in - than to place such a large project into the offshore ocean where we do not know the consequences of the action.

To feed a fishing ko'a with the intention of harvesting fish from that site always allowed that the fish moved in and out of the area and cycled back to the ko'a to be fed. They were allowing natural movement. The fish stocks traveled along the coast and between shallow and deeper waters, and between ko'a. To hold the fish in one place is equivalent of raising them in a pond. The question has to be asked, why did Hawaiians build their ponds where they did? They built "houses" in the ocean that ensured fish were readily available and were capable of raising fish offshore in nets, but, they chose not to. Until this project understands the "why" of that, it can not answer the valid and important questions of impacts that the community is raising.

At an absolute minimum, this project should be required to conduct detailed monitoring before, during and after for a much smaller version of the project on a range of variables that will clearly determine whether there are changes in wild fish population behaviors and ocean nutrients, as well as the current and tidal drift of those nutrients and effluent from the caged fish farm. In order to do so, a minimum of a full year of monitoring (and ideally 3 years) is required to have an inkling of the range of change in currents, deep to surface water cycling (ie. cold to warm), nutrient and effluent settling on the ocean bottom, changes in ocean bottom marine fauna, and changes in fish and other marine fauna movement patterns through the area and across the seasons. The current document does not provide sufficient monitoring detail to assess whether it will be capturing the right information to answer those questions.

Sincerely,

Penny Levin
224 Ainahou Place
Wailuku, HI 96793



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Ms. Penny Levin
224 Ainahou Place
Wailuku, Hawaii 96793

Dear Ms. Levin:

Thank you for your comments on the Draft Environmental Assessment (DEA) for the proposed expansion of the Hukilau Foods LLC (HF) State ocean lease two miles off Ewa Beach, Oahu. The carefully chosen HF site has been in commercial production of the native fish moi, for over seven years, without any significant issues arising with Federal or State agencies, native Hawaiians, and the general public. Moreover, the Company has well over 2000 days of observations at the existing and proposed expansion site on which to base its statements.

HF believes the general concerns you raise from your review of the DEA are adequately addressed in the Conservation District Use Permit Application (CDUA) and the DEA. We provide the following comments, clarifications and document highlights for your further consideration.

a. Wild fish populations

Important aspects of the effects of the expanded project on wild fish populations are discussed in the CDUA and DEA, including recruitment, stock escape, and fish aggregating characteristics. The farm will not have a significant effect on recruitment to wild populations of organisms considering the relative size of the farm and the large expanse of available natural habitat for reproduction and recruitment on the South Shore of Oahu.

To date, there has been no known escape of fish from HF cages. Concerns over potential for disease transfer to wild stock are addressed through rigorous stock testing and management procedures described in the DEA, as well as 24/7 site security through remote cameras. Since HF fish are genetically still wild fish and escape event would be similar to a stock enhancement event regularly conducted by the State.

HF has observed that the existing cage farm has attracted marine life and essentially has created a mini-ecosystem in what was relatively barren part of the ocean. These cage structures generally attract a host of benthic invertebrates and algae, as well as, benthic, reef and pelagic species of fish; similar to the State managed Fish Aggregation Device (FAD) system. Broadly, HF experience indicates the mini-ecosystem is a positive addition to the ocean and the cage system will come into dynamic balance with the much larger and diverse ocean environment.

b. Conflicts with marine mammals, endangered species and fishers

Marine mammal and protected species issues, as well as, site use by local fishers are adequately discussed in the CDUA and DEA. Regarding marine mammals and those species protected by Federal and State law, these species have not been observed at or in the vicinity of the farm, with one exception,

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green sea turtles. Green sea turtles have been observed on occasion at the HF site. They remain in the area from a few minutes to a few hours, and are not affected by the farm activities.

There have been no conflicts with the few fishers who wish to troll or drift fish at the site and that use will continue. As stated, anchoring of boats in the lease area has been discouraged and a more formal declaration is being requested for the expanded site. The boating public and fishers in particular, have been very supportive and HF has cooperated with experienced commercial fishers to ensure big eyed scad fishing can take place without affecting operations.

c. Feed concerns

The particular fish feed concerns are not specified. HF utilizes a cost-effective, commercially available feed that has the composition of 43% crude protein, with an average conversion ratio of 2 lbs feed to 1 lb fish. This ratio is normal for a relatively new aquaculture species and can be expected to be improved through ongoing research. As HF explained, feeding on the farm is carefully controlled and observed to minimize wastage. According to HF's feed manufacturer, Skretting, fish meal material is sourced from regulated and monitored fisheries that are sustainable.

d. Cultural resource impacts

The particular cultural resource impacts are not specified. HF reiterates that it has been in operation at its existing site two miles offshore for seven years and with the previous research project included, ten years. There have been no cultural resources issues to date and none are anticipated with the expansion. There are no artifacts in the lease area, which averages 150 ft. deep. The HF cultural assessment found no concerns and included consultations with the Office of Hawaiian Affairs, the Ewa Beach Neighborhood Board, and a very knowledgeable, Leeward Oahu, Hawaiian cultural practitioner and activist who confirmed the conclusions.

e. Economic impacts

The economic impacts concerns on Hawaii and mainland markets are not specified. HF believes the economic impacts on Hawaii are overwhelmingly positive; including much needed job generation; increased availability of fresh, high quality seafood; and taxes, lease rents and secondary industry expenditures paid yearly. HF fails to see the relevancy of your concern with U.S. markets, other than to point out that Hawaii export production can have a positive impact by reducing America's \$ 8 billion seafood trade deficit.

You raise several other concerns regarding the HF project and its environmental review addressed below. HF has satisfactorily considered cumulative impacts and expectations are that the expanded lease acreage will accommodate the expanded production capacity given the physical nature of the site, i.e., the relatively strong and consistent currents, the barren sandy substrate suitable for anchoring and the lack of significant marine life in the area. Moreover, a comprehensive, State approved water and substrate quality monitoring program will provide the feedback to sustainably manage the expanded project. Further, the DEA provided sufficient description and detail for interested public agencies and the general public to understand the expanded project and HF believes an Environmental Impact Statement (EIS) is not required.

In addition, regarding seeking community inputs, we highlight the project is undergoing statewide review through the permit process. HF consulted with the Leeward Hawaiian community through the Ewa Beach Neighborhood Board and a very knowledgeable Hawaiian cultural practitioner, as well as, making presentations to the Office of Hawaiian Affairs (OHA), the leading Hawaiian organization in the state. Note, OHA has established a policy to encourage native Hawaiians to become involved to the fullest and highest extent possible in offshore fish farming. Further, it is Hawaiian custom that persons talk to the affected community about a project, in this case, the Leeward community, before beginning the project planning and HF respects that custom.

Regarding your comments concerning traditional Hawaiian fishponds and Hawaiian koa, we offer the following comments. Hawaiian fishponds are truly unique structures in the Pacific and did provide seafood to Hawaiians; however, with respect to aquaculture productivity they are characterized as an extensive system which produces relatively low yields per acre. Regarding Hawaiian koa, there are no koa in the expanded lease area or the vicinity. Lastly, HF reiterates it has been operating at its existing site for seven years and ocean conditions have been monitored on the site for those seven years, and three years prior during a research project. HF understands ocean conditions at the site very well and will continue a comprehensive, State-approved monitoring program during and after the expansion.

Finally, please also note that as an Ocean State, it is Hawaii's stated policy that State marine waters can be utilized for commercial, for-profit open ocean aquaculture for the economic benefit of its citizens. The State implemented a rigorous permitting process to govern the siting and expansion of offshore aquaculture in the Hawaiian Islands. The long-range goal is to expand and diversify the Hawaii economy through nurturing aquaculture, a local aquatic food production industry that is economically beneficial, environmentally friendly, socially accepted and culturally appropriate.

We appreciate your participation in the environmental review process.

Sincerely,



John R. Cates
President

Subj: **Comment on Expansion of Hukilau Foods Offshore Fish Farm, Mamala Bay, Oahu (DEA)**
Date: 6/22/2009 2:21:04 A.M. Hawaiian Standard Time
From: vallohfoto@yahoo.com
To: jscorbin@aol.com

John Corbin
Aquaculture Planning and Advocacy LLC

Mr. Cates, ,

CC: Dawn Hegger (Department of Land and Natural Resources), John Corbin (Aquaculture Planning and Advocacy LLC),

I am extremely alarmed about the expansion of Hukilau Foods offshore fish farm in Mamala Bay and formally request the preparation of an Environmental Impact Statement.

There are already negative effects on Mamala Bay, such as the introduction of concentrated amounts of fish waste.

The expansion of Hukilau Foods would quadruple the production of Moi - from 1.2 million pounds to 5 million pounds over a three year period. Such a large increase would also mean higher negative impacts, which have not been sufficiently studied at this site.

Here are links to two articles about fish farming concerns:

<http://archives.cnn.com/2000/NATURE/03/31/aquaculture/index.html>

<http://www.france24.com/20090622-norway-fish-farms-thrive-under-ecologists-watchful-eye>

Hawaiian waters are a public resource. Hukilau Foods is asking the citizens of Hawaii to allow it to increase its profit by intensifying production in a way that could cause substantial harm to public resources, such as the spread of disease and parasites to our wild fish stocks.

Any negative impacts Hukilau Foods will have on existing natural resources will be shared by all of us, while profits will only benefit Hukilau Foods.

As a responsible member of our island community, Hukilau Foods must complete a full environmental impact statement by an impartial third-party BEFORE proceeding.

Sincerely,

val loh
2552 peter street
honolulu, HI 96816

Monday, June 22, 2009 AOL: JSCorbin



HUKILAU FOODS
A GROVE FARM COMPANY

July 21, 2009

Mr. Van Loh
2552 Peter Street
Honolulu, Hawaii 96816

Dear Mr. Loh:

Thank you for your review of the Hukilau Foods LLC (HF) Draft Environmental Assessment (DEA). HF is not aware of any negative effects on Mamala Bay from the introduction of concentrated fish wastes and the existing farm has met water quality standards since its inception.

To date, there has been no known escape of fish from HF cages. Concern over potential for disease transfer to wild stock are addressed through rigorous stock testing and management procedures described in the DEA, as well as 24/7 site security through remote cameras.

HF believes the DEA provides sufficient description and detail for interested public agencies and the public to understand the expanded project and an Environmental Impact Statement is not required.

Further, it is the policy of the State of Hawaii that State marine waters can be utilized for commercial, for-profit open ocean aquaculture for the economic benefit of its citizens. The State has implemented a rigorous permitting process to govern the expansion of offshore aquaculture in the Hawaiian Islands. The long-range goal is to expand and diversify the Hawaii economy through nurturing a food production industry that is economically beneficial, environmentally friendly, socially accepted and culturally appropriate.

We appreciate your participation in the environmental review process.

Sincerely,

John R. Cates
President

3-1850 Kaunualii Highway P.O. Box 662069 Lihue, HI 96766-7069

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APPENDIX 4: CULTURAL RESOURCE ASSESSMENT

Introduction

A Cultural Resources Assessment is required in conjunction with any Environmental Assessment and Impact Statement (Chapter 343, HRS, as amended). The assessment should identify and assess any potential impacts of a proposed project on the use of cultural and natural resources at the proposed site and its vicinity by native Hawaiians, including impacts on traditional and customary practices.

HF is proposing a seaward expansion of its existing 28 acre State lease for sea cage aquaculture of Moi by an additional 33 acres; for a new total lease site of 61 acres. The project, which is located in the open ocean about 2 miles off Ewa Beach, would expand the number of cages from four to eight. HF would change out for existing smaller SS 3000 cages (3000 m³ in volume) to four SS 6000 series cages (6000 m³ in volume) and add four additional SS 6000 cages. Cages would continue to be operated submerged, with the support of a permanently moored feed/ security barge on site. HF is requesting the entire lease site be designated a no snorkeling or SCUBA diving area and no anchoring of any boat be allowed. Transit of boats and troll and drift fishing at the site would continue to be permitted.

Methods

HF and its predecessor company Cates International Inc., have been operating in the area for ten years, seven years as a commercial farm. Personnel reviewed Company experiences and records to determine if there were any complaints or issues with regard cultural resources and traditional practices.

William Aila, the long-time Harbor Master at Waianae Small Boat Harbor, recreational fisher and someone very active in the Oahu Hawaiian community, was interviewed regarding any concerns the Hawaiian community may have with the project. Mr. Aila grew up in Waianae. His family has fished the area from Puuloa (Pearl Harbor) to Kaena for more than five generations beginning with his great, great, grandfather Vincent Keumi and great, great, grandmother Molly (Kahaawinui, maiden name) Keumi. They fished from Kapalama kai to Kalaeloa.

Mr. Aila has been diving this area for over 20 years as a commercial aquarium fish collector, commercial net fisherman, and native Hawaiian diver collecting resources for cultural, as well as religious presentation. He has contributed his ocean expertise and community knowledge to numerous activities including: past memberships on the Waianae Coast Neighborhood Board; State Bottom Fish Task Force, Pelagic Advisory Sub-panel to the Western Pacific Regional Fishery Management Council (WESPAC); Chairman of the Small Boat Pelagic Fisheries Working Group (WESPAC); and the Bottom Fish and Indigenous Rights Advisory Sub-panel (WESPAC). Currently Mr. Aila serves as a Board member of Ka Papa O Kakuhihewa, an organization formed to fund educational projects relating to resource conservation in the area from Kapolei to Kaena, and a Board member of Hui Malama I Na Kupuna O Hawaii Nei, and organization dedicated to repatriating and burying iwi kupuna and their possessions.

In addition, the Ewa Beach Neighborhood Board was briefed on three occasions on the project and asked for comment. Further, the Office of Hawaiian Affairs (OHA) was briefed on this project and relevant literature was searched.

Results

The project is two miles East offshore of the Honouliuli ahupua'a, which is the largest and western most ahupua'a in the highly urbanized Ewa District. Water depths average 140 ft. and the bottom is barren sand. The initial site was in large part chosen because of the open ocean conditions, sand bottom for anchoring cages, strong and consistent currents, and lack of recreational and commercial use, e.g., fishing. The proposed expansion site has similar physical and use characteristics.

Company experience to date is that there have been no complaints regarding any impacts on cultural resources or traditional practices. HF is aware that nearshore fisheries and coastal marine resources are traditionally very important to native Hawaiians for subsistence gathering and recreation.

However, the proposed expanded lease site is far from the Ewa shore where traditional and customary gathering occurs (e.g., limu) and does not have any significant fishery resources. There are no known traditional koa in the area. Moreover, Chapter 187A, HRS, defines konohiki rights to consist of fishing grounds from the reefs and where there happens to be no reefs, from the distance of one geographical mile seaward of the beach to low watermark. The HF site is two miles offshore. In addition, there were no coastal Hawaiian fishponds located on this part of coast (Athens, J. Stephen, ed., 2000).

Mr. Aila confirms that to his knowledge the HF area is of no particular significance to native Hawaiian fishers, though he noted the presence of sea cage aquaculture has improved fishing for certain species in the area, particularly opelu. He and others in the leeward fishing community attribute this improvement to the positive fish aggregation characteristics of the sea cage farm. Further, no cultural concerns were raised by the Ewa Beach Neighborhood Board.

Conclusion

Ten years of experience at the existing site and input from knowledgeable individuals and the Ewa Beach Neighborhood Board indicate the project expansion will have no significant impact on any cultural resources or traditional and customary native Hawaiian practices. Boats will continue to freely transit the site and drift and troll fishing by the public can continue as before.

Reference

Athens, J. Stephen (ed.), 2000. *Ancient Hawaiian Fishponds of Pearl Harbor: Archeological and Historical Studies on U.S. Navy Lands, Hawaii*. Report prepared for State Historic Preservation Division, Department of Land and Natural Resources, Honolulu, Hawaii. IARII, Honolulu, Hawaii.

APPENDIX 5: COMMON NAMES OF RESIDENT AND TRANSIENT SPECIES

Appendix 5. Common names of resident and transient (*) species identified around HOARP Phase II Project. Species are representative of species observed around the HF commercial cages.

ORNAMENTALS	INVERTEBRATES	REEF HERBIVORES	PELAGIC HERBIVORES	REEF CARNIVORES
Butterflyfish	Mollusks	Filefish	Filefish	Barracudas
Milletseed <i>Chaetodon miliaris</i>	Oyster <i>Margaritifer spp.</i>	Shy <i>Cantherhines verecundus</i>	Scribbled/broomtail <i>Aluterus scriptus</i>	Great barracuda <i>Sphyrna barracuda*</i>
Bluestripe <i>C. fremblii</i>	Mussels (unknown)	Pufferfish		Jacks
Blacklip <i>C. kleinii</i>	Barnacle <i>Lepas anserifera</i>	Porcupinefish <i>Diodon hystrix</i>		Bluefin <i>Caranx melampygus*</i>
Multiband <i>C. multicinctus</i>	Crustaceans	Stripebelly <i>Arothron hispidus</i>		Island <i>Carangoides orthogrammus*</i>
Anthias	Coral banded shrimp <i>Stenopus hispidus</i>	Spotted <i>A. meleagris</i>		Leatherback <i>Scomberoides lysan*</i>
Bicolor <i>Pseudanthias bicolor</i>	Blue crab <i>Callinectes sapidus*</i>			Amberjack <i>Seriola dumerilli</i>
Surgeonfish	Collector crab <i>Simocarcinus simplex</i>			Ono/wahoo <i>Acanthocybium solandri*</i>
Yellowfin <i>Acanthurus xanthopterus</i>	Echinoderms			
Blue spine unicornfish <i>Naso unicornis</i>	Cushion star <i>Culcita novaeguineae*</i>			
Longfish	Blue spotted urchin <i>Astropyga radiata*</i>			
Trumpetfish <i>Aulostomus chinensis</i>	Banded urchin <i>Echinothrix calamaris*</i>			
Cornetfish <i>Fistularis commersonii</i>	Nudibranchs			
Hawkfish	Seahare <i>Stylocheilus longicauda</i>			
Longnose <i>Oxycirrhites typus</i>				
Squirrelfish				
Bigscale soldierfish <i>Myripristis berndti*</i>				
Wrasses				
Hawaiian hogfish <i>Bodianus bilunulatus</i>				
Saddleback <i>Thalassoma duperrey</i>				
Blackside razorfish <i>Xyrichtys umbrilatus</i>				
Frogfish				
Commerson's frogfish <i>Antennarius commersonii</i>				
Damselfish				
Hawaiian dascyllus <i>Dascyllus albisella</i>				

BOTTOM FISH	PELAGIC CARNIVORES	MAMMALS	ELASMOBRANCHS
Bonefishes	Mackerels	Dolphins	Rays
Bonefishes <i>Albula sp.*</i>	Scad <i>Decapterus macarellus</i>	Spinner <i>Stenella longirostris*</i>	Eagle <i>Aetobatis narinari*</i>
Squirrel fish <i>Priacanthus meeki</i>			
Snappers	Needlefishes		Sharks
Gray <i>Aprion virescens*</i>	Crocodile <i>Tylosurus crocodiles*</i>		Sandbar <i>Carcharhinus plumbeus</i>
Bluestripe <i>Lutjanus kasmira*</i>			
Eels	Tunas		
Garden <i>Gorgasia hawaiiensis*</i>	False albacore <i>Euthynnus alletteratus*</i>		
Conger <i>Conger cinereus*</i>	Yellowfin <i>Thunnus albacores*</i>		

Note: Resident species were classified for this study as observed on a daily basis. Transient species were observed periodically. Species and common names based on the HOARP Final Report (2001) and The Hawaii Fish Species Reference (www.reef.org/data/haw/fishsp.htm).